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1866, June 21,
Gift of
Hon. J. Hawkins,
of Boston,
(H. B. 1862.)

LIST OF OFFICERS FOR 1854.

WM. L. LEE, *President.*

BENJ. PITMAN,
P. CUMMINGS,
L. L. TORBERT,
C. B. ANDREWS,
R. W. WOOD,
H. A. WIDDEMAN, } *Vice Presidents.*

GEO. WILLIAMS, *Treasurer.*

JNO. MONTGOMERY, *Corresponding Secretary.*

EDWIN O. HALL, *Recording Secretary.*

S. N. CASTLE,
B. F. SNOW,
C. R. BISHOP,
S. REYNOLDS,
W. NEWCOMB, } *Executive Committee.*

JUN 15 1916

PROCEEDINGS

OF THE

ROYAL AGRICULTURAL SOCIETY,

FOURTH ANNUAL MEETING,

HONOLULU, JUNE 13, 1854.

The Society was called to order by the President, Hon. Wm. L. Lee, at 11 o'clock, and the minutes of the last Session of 1853 were read by the Secretary.

In accordance with the 9th Article of the Constitution, the President read a most interesting and valuable Report, which was accepted by the Society, and is as follows:

Gentlemen of the Society:

It becomes my pleasant duty again to congratulate you on the return of our annual festival; and, agreeably with our Constitution, to render you a report of the proceedings of our Society for the year which has just closed. I think there is no reason to doubt that our association is a useful one,—one whose influences for good are seen to some extent at the present time, in the increased interest manifested in the culture of the soil, the importation of new and improved breeds of stock, the introduction of new fruits, plants and flowers,—and one whose influences will be deeply felt in the bright future so sure to dawn upon these pleasant islands. That we have done good who will question? Still, I am not satisfied that we have done all we ought to have done; and I trust that our efforts for the future will be pushed with redoubled energy, and so directed as to confer the greatest amount of real, practical benefit upon the great cause we seek to promote. Let us take hold of the matter with a will,—remedy whatever defects may exist in our plan of operations,—and push our cause for the year to come with a life and vigor which shall greatly extend our usefulness.

Our Society is a progressive one. We have gained strength with every new year, increasing in members and funds, and adding, I trust,

to the increased interest which is manifested in all the various branches of Agriculture, Horticulture, Floriculture and Manufactures.

Soon after the last annual meeting, the Board of Managers held several conferences upon the subject of premiums, and the result of its deliberations was the resolution to offer to the public a list of 160 premiums, at a cost to the Society of about one thousand dollars. Most of these have been ordered, and part of them are now on their way to the Islands in the ship "Falcon." In my opinion, this list is greater than the Society can well afford; and it is a question of some importance, whether we could not benefit the Islands more by appropriating a less sum to premiums, and a larger one to the importation of stock and improved agricultural implements.

The Board of Managers has recently ordered from the United States a Devon bull and cow, several new breeds of swine, and taken measures to insure the introduction of a large variety of wheat, oats, barley and garden seeds, suitable to our soil and climate; and it has only been deterred from doing more in this line by the fearful risk incurred in importing stock such a long voyage and through so many changes of climate. Much has been done, also, by individual members of the Society, in introducing new stock, and many orders have been sent for horses, cattle and sheep, to California, New England and Australia, some of which have already arrived, while others are on the way.

The financial affairs of the Society are in a healthy and prosperous condition, and for a detailed account of the same, I beg to refer you to the report of our worthy Treasurer. The total receipts for the past year have been $2,186 23, and we have the satisfaction of reporting that while we have added $1,200 to our permanent funds, we have paid all demands, and still have a balance on hand sufficient to meet our ordinary expenses for the time being. If there is any one thing more than another necessary to the prosperity and usefulness of our Society, it is, in my opinion, the preservation of a sound and healthy state of our Treasury.

The cause of Agriculture in these Islands, I think, is decidedly upon the advance; and though some of us have been disappointed in our crops, though our trade with California—the great consumer of our

products—has diminished, and though the small pox has smitten thousands of our best laborers to the ground, we have great reason to rejoice in the general prosperity and abundance of the land. In several branches there has been great activity and progress, and such as cannot fail to gladden the hearts of all those who are fond of sweet flour, good mutton and tender beef.

WHEAT.—The rapid increase of wheat raising during the past year has been such as to mark a new era in the history of the Islands.—There has been sown in the region of Makawao, East Maui, during the last year, some 1,200 acres of this valuable grain; and though about 200 acres of it have been cut down by the pelua, it is estimated that the remaining 1,000 will yield at least 25,000 bushels of beautiful wheat, or an average of 25 bushels per acre. This, it is said, will make five thousand barrels of flour, or more than enough to supply our home consumption. It is indeed a glorious day when we can raise our own breadstuffs, and one which will be appreciated by those who for the last quarter of a century have been compelled to eat the miserable, sour, musty stuff called flour, which has been imported round Cape Horn, and after being mixed with about an equal quantity of saleratus, baked, and called bread. "I have little doubt," as Mr. Green remarks in his valuable report on this subject, "that the ill health of many of the early residents of the islands had its origin in the character of the flour which was imported from abroad." For the last three months I have made Makawao wheat my staple food, and I hope never to eat another ounce of imported flour. To the pioneers in this enterprise of growing wheat,—to those who have so faithfully persevered in raising their little patches of the beautiful grain in the face of the generally expressed opinion that neither our soil or climate was suited to its produce,—too much honor cannot be awarded.

In the early days of wheat sowing, when it was raised by the peck and bushel, the lava rocks were used as a threshing machine, and the mouth for a fanning mill; but lo! the Yankee has come with his reaping machine, his horse-power and steam mill, and he will wake up the slumbering soil, cause the fields to rejoice with beauty, gather in his harvest and his dimes, and give us plenty of sweet bread and to spare.

It has been generally thought that wheat would not grow and fill well at an elevation above the sea of less than a thousand to fifteen

hundred feet. This is a mistake; for Mr. Emerson, of Waialua, has this year sown a patch not ten feet above the level of the sea, which has filled admirably. Some of it is now here for exhibition.

Not the least among the wonders of the day is the new steam flouring mill, recently erected in Honolulu by that enterprising association the Hawaiian Steam Flouring Co., and to which we look the coming year for our bread. This mill, the engine and machinery, is the work of three worthy and ingenious Down Easters, who do everything upon honor, and who are a real blessing to the islands.

The new varieties of wheat introduced by the Society were sown late, and consequently cut down by the pelua.

Corn, Barley, Oats.—The corn crop of the islands is a very uncertain one, and is only remunerative in a very few locations. After being nursed through its infancy, and preserved from its great enemy the cut-worm, it is subject to be blasted in a single night by a smaller but more terrible foe. This is a tiny white insect, so small as to be hardly visible, which settles on the field in a cloud, as it were, and just as the corn begins to silk, and the heart of the husbandman gladdens with hope of an abundant harvest, the green field turns brown, withers and dies. The best corn is raised at Waialua, on this island, and finer meal than is made from it at the new Flouring Mill was never eaten. The kind generally planted is the yellow corn, of from 16 to 18 rows. Several new varieties were introduced by the Society last year, and scattered on the different islands, but I have had no report from them.

There is a steadily increasing demand for oats and barley, for horse feed, at about a dollar and twenty-five cents per bushel, and yet there is scarcely any raised. Why is this? Both will generally do well where wheat grows, and I should think the raising of them would be profitable. At least we ought to raise enough to supply our own market. At present our oats are mostly imported from the United States, by way of filling in boxes of hardware and other goods which they do not injure. From the varieties of barley imported by the Society last year I have not yet heard. Mr. Townsend is said to have a flourishing field of this grain growing, at Makawao, on East Maui.

Sugar.—The growth and manufacture of sugar in this country is still in its infancy. The trials and difficulties of pioneers in this busi-

ness, remote from every means and facility for carrying it on, can never be told; but I trust the day has arrived when some, at least, of those who have persevered so manfully in rolling stones up hill, will be rewarded for their labors. The last year's crop has not equalled our expectations, though it has exceeded that of the year before. We estimate the whole produce of the islands for the last season at 800 tons, which, with the syrup and molasses, is valued at $120,000. The great obstacles in the way of an increased produce of this article, as I have often before remarked, are the want of capital, and the still greater and ever increasing one of labor. Each successive year reduces the number of Hawaiian laborers, and whether this diminution can be profitably supplied by the importation of Coolies is still problematical.—The present crop of the Koloa plantation, on Kauai, owned by Dr. R. W. Wood and Mr. Burbank, will amount to 300 tons of beautiful sugar, which, at six cents per pound, makes the handsome sum of $36,000. Its syrup and molasses I estimate at ten thousand dollars more, which shows a total of $46,000. The whole expenses of the plantation per annum do not exceed, I am told, fifteen thousand dollars. Comment is unnecessary.

The Lihue plantation, owned by Henry A. Peirce & Co., only ten miles distant from that of Koloa, has been less favored. Owing to causes which no human agency could avert, the large crop anticipated has proved an almost complete failure. A year ago last December the prospects at Lihue were cheering in the highest degree, and we were sure that we should harvest a crop this season of at least 400 tons. The sun never shone on finer fields of cane. In January a storm came, accompanied with terrible thunder and lightning, and blasted our smiling fields as with the breath of fire. After the storm passed, the cane fields grew brown, rotted and died, and 400 acres that should have brought us at least $50,000, hardly produced one-sixth part of that sum. The whole crop did not exceed fifty tons.—The cause of this fire blight is still a mystery. At first we thought that it might be the work of an insect, but the closest examination showed that we were mistaken, and we can ascribe it to nothing but some great convulsion in the atmosphere. In other words, our theory is, that it was the effects of the lightning, which flashed fearfully du-

ring the whole storm. The idea that the atmosphere, being overcharged with electricity, blighted our cane, may sound ridiculous to some, still it is the only explanation we can give, unsatisfactory as it may be to the wise and scientific.

Torbert's plantation, on the Island of Maui, which stands second to none in the general character of its products, is in a flourishing condition, and its proprietor, by the hardest toil and most indomitable perseverance, has overcome the greatest of difficulties; and, I trust, is on the high road to success. This plantation has very deep soil, and is said to produce more sugar to the acre than any other in the Islands. The only other plantations of East Maui now in operation, are those of Messrs. Wood and Spencer, and the Haalimaili plantation, belonging to Stephen Reynolds, Esquire. Owing to a variety of causes, these plantations have not made a large show of produce this year, but they are capable of great things in the way of sugar growing, which I hope we shall soon see realized.

The sugar plantations, belonging to the Chinamen, in the district of Hilo, Hawaii, I am sorry to say are at a stand-still. Their proprietors, so far as improvements are concerned, stand just where their ancestors stood 2000 years ago, and not a step will they advance. The largest cane I have ever seen was raised in Hilo, and a large part of the district is quite an Eden in the way of cane growing. The great objections to plantations in Hilo are the iron-bound coast and the impossibility of building a good road to their only harbor. Still, these obstacles are not insuperable.

Since our last meeting, we have imported, through the kindness of Capt. Edwards, of the ship "George Washington," some new seed cane direct from Tahiti, which will doubtless prove a valuable acquisition to our planters.

Coffee.—Coffee is cash, and the demand for it the past year has been greatly beyond the supply, and that too at prices ranging from 12 to 18 cents per pound. The call for Kona coffee, which is said to be inferior to none in the world, is much greater than for any other kind, and it is a thousand pities that that beautiful district does not send more to market. The only planters of coffee to any extent in the Islands, at the present time, are Messrs. Cummings & Hall, of Kona, Mr. Pitman, of Hilo, and Mr. Titcomb and Messrs. G. Rhodes & Co.,

of Hanalei, Kauai, all of whom deserve praise, for all have had their trials to overcome, and have battled with them manfully. The greatest producer of coffee is Mr. Titcomb, of Kauai, who is famous for good management and thrift.

POTATOES —Two or three years since, the largest export from these Islands was that of Irish potatoes to California. To-day we are eating California potatoes of a better quality and at a less price than those of our own raising. How shameful! There is no soil in the world better adapted to the raising of this vegetable than the rich, mellow loam of Kula, East Maui; and I am happy to hear that the people of that region are beginning to wake up to the importance of raising a supply for our whaling fleet. The great potato man of the Islands is Mr. Torbert, and from him I learn that he has introduced the purple California potato into the uplands of Kula since our last gathering, and that it is fast becoming popular with the natives.—Thank God! that with all our indolence and neglect of the potato, we have as yet escaped that great scourge of other lands, the potato rot.

Of sweet potatoes we have a great abundance, probably because they are an article of food with the natives, who esteem Irish potatoes as little better than chips. But there is great room for improvement in the vegetable, and Mr. C. R. Bishop has been at much trouble and pains to introduce the seed of new varieties from the United States.—The Society has also taken steps to introduce new seed of this valuable plant.

TOBACCO.—The seed of this plant, imported last year by the Society, from Cuba and the United States, was sent to Messrs. Archer and Gruben, of Kauai, and I learn some of it has grown, and gives promise of a good leaf.

GARDEN VEGETABLES, MELONS AND FRUITS.—Most of the garden vegetables produced at the Islands are raised at the hot sea-side, in a climate not the best adapted to their growth; and, consequently, many of them do not thrive, even with the best of nursing. Tomatoes, radishes, carrots, cucumbers, lettuce, egg-plants, beans and squashes can be grown in any quantity, with good care; but, generally speaking, beets, turnips, onions, parsnips, parsley, peas, cabbage and many other valuable vegetables, are of a very inferior quality, and require more watching and money than they are worth. Several natives grow

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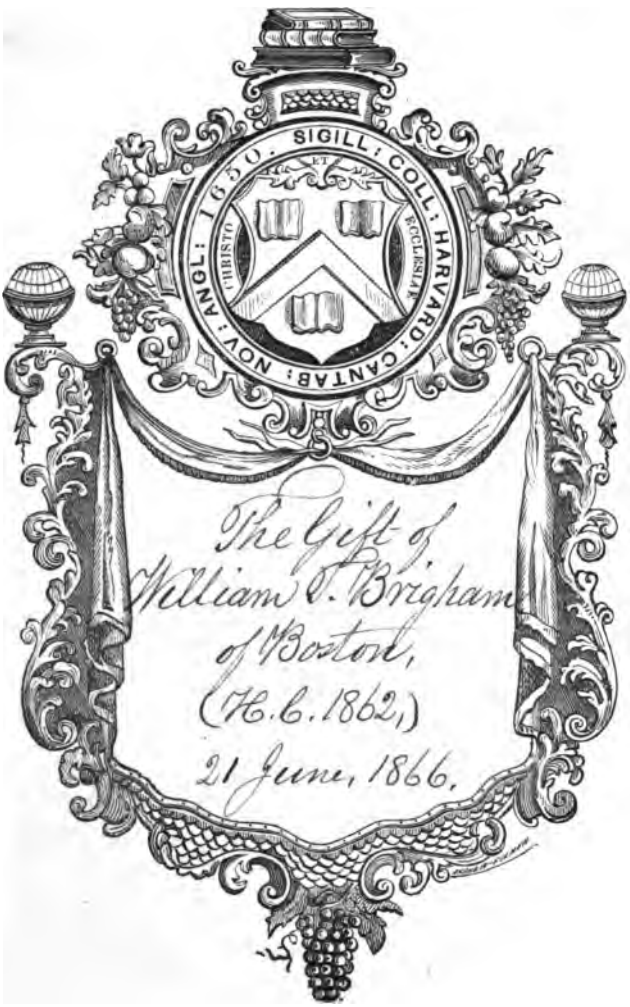

The Gift of
William T. Brigham
of Boston,
(H.C. 1862,)
21 June, 1866.

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also a water-wheel on a new plan, manufactured under the direction of Mr. Weston, which has given entire satisfaction.

The Haalimaili plantation has suffered the loss of one crop, on account of some radical defects in the mill,—the fault of the manufacturer. With the aid of Mr. Weston, these defects have been remedied, and the mill is now in successful operation. Its proprietor, Stephen Reynolds, Esq., has had many difficulties to contend with, which might have daunted the resolution of many younger men.

In reviewing the improvements made within the last four years, the substantial mills and buildings, which have taken the place of the temporary contrivances of previous years, have, in the opinion of your Committee, placed this branch of industry upon something like a permanent basis.

In this respect, the mill on the Lihue plantation has been most admired, for the substantial nature and workmanship both of its machinery and masonry; and the entire establishment, in respect to its arrangement, fitness, completeness and durability, is highly creditable to the Islands, and may be safely followed as a model.

There is now under cultivation, on the Islands of Maui and Kauai, twelve to fourteen hundred acres of cane, all of which is said to be in a flourishing condition. The proprietors of the Lihue plantation have, within the last year, introduced the Tahitian cane, which for many years has had so high a reputation in the West India Islands. They intend giving it a thorough trial, the result of which may be made known at the next annual meeting of the Society.

In respect to the plantations under the direction of Chinese, on the Island of Hawaii, your Committee are informed that Asing, in despite of the usage of his countrymen, the Celestials, is availing himself of the improvements of the day, and by the use of the new separator, is producing a superior quality of sugar.

Connected with the subject of this report, there is a question of some importance, which remains to be considered.

The first attempt to manufacture sugar in the State of Louisiana was made in 1796, by a Mr. Bore, who was said to be a man "reputed for his daring and energy," and who "formed the desperate resolve of making sugar!"

At that time, the only question relating to Mr. Bore's experiment,

in which the public were at all interested, was, "will it grain?" Nobody presumed it would ever pay.

But to the planters, as well as all other business men in these Islands, the question of paramount importance is, *will it pay?* At present, any unfavorable conclusions, drawn from the experience of the past, would be premature, and ought not to be taken as decisive, since, till within a few years, the production of sugar on these Islands has not been attempted to be prosecuted in a systematic manner, with the requisite capital. The oldest plantation now in operation on the Islands may be said to have been initiated in 1835. Until 1841, however, no mill worthy the name had been erected. For several years the undertaking appeared to most of the foreign residents to be quite as Quixotic in its character as did that of Mr. Bore to the people of Louisiana. In consequence of the financial embarrassments of the original proprietors of this estate, it fell into a state of dilapidation in 1844, in which it continued till 1848, when it changed hands. To restore the property to a healthy condition was not the work of a single year. In 1850, three new sugar estates were commenced nearly simultaneously. Yet in respect to the requisite buildings, machinery, fences, stock and utensils, it is only within the last year that they may be said to have been completed.

It has been somewhat discouraging to the planters, that their first systematic endeavors to extend this branch of industry should have been followed so immediately by a series of disasters. It was an unfortunate coincidence that whilst the planters on one island were subject to heavy losses by the failure of their crops, those on the other islands suffered nearly simultaneously, by an extraordinary depression in the sugar market. It may not be improper to mention that another circumstance which has contributed to involve some of the planters, was the unfortunate speculations in California, into which they were tempted, in 1851,–'2.

But too much stress ought not to be laid upon failures and losses, which are entirely incidental, and not likely to recur again for many years to come. Such a drought as that on Kauai, which destroyed the crop of 1852 and proved so injurious to that of the year following, has not before been known to the oldest resident. And the same ob-

servation is true in respect to the blight, so fatal to the crop of Lihue the last year.

In respect to the production of the great agricultural staples,—sugar, cotton and coffee,—the value of an investment cannot, like that of bank stock, be determined by the profits or losses of a single year. The returns of a single crop may show apparently extraordinary gains; were it otherwise, the planter would not be able to sustain contingent losses, which, from the nature of his business, are inevitable. To arrive at correct estimates, the only reliable data must be the aggregate results of operations for a number of years.

The following communication to the Chairman of your Committee is from Mr. Clough, formerly a resident of the State of Louisiana, and as it presents, in some particulars, an interesting parallel to the culture and manufacture of sugar in these Islands, they beg leave to introduce it.

HONOLULU, Feb. 4th, 1854.

DEAR SIR:—I cheerfully comply with your request to furnish you with a comparative statement, in detail, of the cost of producing sugar, and of the mode of culture and manufacture, in the State of Louisiana. A long residence in that State has familiarised me with the culture of cane and the manufacture of sugar, as there conducted. I had long desired to witness for myself the capabilities of these Islands for the production of sugar cane, and on my arrival here, in October last, I availed myself of the earliest opportunity to visit the plantations on the Islands of Maui and Kauai. I find a wide difference in the seasons of the two countries, and consequently in the mode of proceeding in the culture and management of the crop.

In Louisiana, the commencement of the new year is usually celebrated by grinding the last of the old crop. During the month of January, nearly the whole force of the plantation is employed in clearing out old ditches and digging new ones. The surface of the ground, so nearly level and but little above tide water, renders artificial channels absolutely necessary to carry off the surplus water, which falls in torrents at some seasons of the year. During this month, the ground is too much saturated with water to admit of ploughing. This operation usually commences about the first of February, and with the planting, occupies the entire force. The ground is broken up with

mules or horses. As soon as it is ready, one gang is employed in planting, and another at the bed of seed cane, in stripping and topping. The top being too watery to support the young plant, is discarded.

By the beginning of March, the planting is usually finished. Then commences the cultivation of ratoons. In the cultivation of the previous year, the earth had been hilled up around the cane stocks. The plough is now used to throw the earth away from the hills. The ground is also well loosened between the rows. On the first of April the ratoons show well above the surface. During the early part of this month, the grounds reserved for the corn crop,—usually the poorest,—are broken up and planted with corn, to which is added a crop of field peas, to be succeeded the following year by a crop of corn.—During the remainder of the month, the plant cane not being sufficiently advanced to require much cultivation, the laborers are employed in ditching and cutting fire-wood.

As soon as the cultivation of the cane and corn commences, it proceeds, without intermission, till about the middle of July or August, by which time the crops are sufficiently advanced to render further cultivation unnecessary.

During the month of September and early part of October, nearly all hands are employed in cutting and hauling fire-wood, preparatory to the boiling season. The quantity of wood varies with the size of the crop. Three cords to the hogshead of 1200 lbs. is the usual allowance for open kettles. The corn is also harvested in this month, and the pea vines hauled and stacked, to feed the stock during the grinding season. For a plantation producing 200 acres of cane, 100 acres of corn is required for the stock. The last work preparatory to taking in the crops, is putting up the seed cane in what is termed a "mattrass." For this purpose, the best cane is selected and carted to central places, and there laid in large beds. The heavy leaves of the top effectually protect the stocks from the frost. For an estate of the size above named, fourteen acres of good seed cane is required.

The grinding usually commences by the last of October or first of November, and unless a heavy fall of rain should prevent, proceeds without interruption, day and night, until the crop is in. This usually happens about the last of December or first of January.

Very rarely is a crop taken in without injury to the latter part of it by frost. Should this part of the crop not be matured, which is seldom the case, the frost greatly deteriorates the quality, and also reduces the quantity of the product. Sometimes the cane is so much injured that it can be manufactured only into very indifferent syrup.—Heavy losses are sometimes sustained by the planters from this cause. Should the growing season be unfavorable, or the operations of the mill be retarded by heavy rains, these circumstances greatly enhance the injury by frost and the planter's losses.

A few years since, a considerable portion of the sugar region of Louisiana was occupied by cotton plantations. For several years previous to 1846, the price of cotton continued so low that the planters became discouraged, and great numbers commenced the cultivation of sugar. Availing themselves of the experience of the older planters, and adopting the improved kinds of machinery, they were entirely successful. From 14,000 hogsheads, in 1846, the production increased to 350,000, in 1852.*

In addition to frosts, there are other drawbacks upon the planters of Louisiana, from which the Islands are exempted. For two months in the year, the whole force of the plantation is employed in ditching, and in cutting and hauling firewood. The bagasse contains so much water that it cannot be used for fuel, unless cured by means of artificial heat. This mode of curing has been found too expensive to be made available. To cure it by means of solar heat has been found impracticable, as the frequent showers render it more incombustible than when first delivered from the mill. One plan has partially succeeded. By means of railways, large sheds are filled with bagasse, where, by fermentation, it cures in the course of the year, and may be used in part for fuel for the next ensuing crop. But this plan is objectionable on account of the expense, and more generally the bagasse is stacked in large piles, and advantage taken of every turn of dry weather to burn it on the ground.

There is in Louisiana a pest, called the coco grass. It has overrun the whole State, and can only be kept down by continued and thorough ploughing.

On visiting the plantations on these Islands, at the close of summer,

I was struck with the abundance of good grass, and the excellent condition of the stock. Gentle summer rains, dews and moist winds appear to be sufficient to keep the grass green the year round;—an advantage unknown to the planters of Louisiana.

With regard to the seasons of these Islands, there appears to be properly no other divisions than wet and dry. In proof of this, it may be observed that many plants,—annuals in the United States,—are perennials here. The cotton plant, which dies annually in the Southern States, may here be seen bearing full-grown bolls and blossoms at the same time.

In respect to soil, that of Louisiana, for depth and fertility, is unsurpassed by any in the world; and no one can envy the planters this redeeming feature of their country, for they have had all the elements both of heaven and earth to contend against.

High water in the Mississippi is usually five or six feet above the level of the cane-fields. It is confined in its channel by embankments 150 miles in length, on either side. In a single night a crawfish may perforate the bank, opening a channel, through which there is a rush of waters; the levee is washed away, the country is deluged, and the labor of a whole year destroyed. Should the planters escape such a catastrophe, there is yet another, to which they are sometimes exposed, nearly as fatal in its consequences. An early frost may attack the cane, and the fields which a few days previous looked so promising, appear as if a fire had swept over them.

The following is an estimate of the original cost and current expenses of a plantation in Louisiana, capable of producing 200 hogsheads, equal to 140 tons of sugar:

500 acres of land, - - - -	$20,000
Buildings, - - - - - -	18,000
Mill, engine and boilers, - - -	5,300
40 negroes, at $800 each, - - -	32,000
20 infirm do. and children, $200 each, -	4,000
6 domestics, $600 each, - - - -	3,600
Total, - - - -	$82,900

CURRENT EXPENSES.

Chief items as follows:

Overseer's salary,	- - -	$1,200
Shoes and clothing	40 hands, $12 each, -	480
do	20 infirm do, -	200

39 bbls. pork, $14 each, - - -	546	
900 bbls. corn, 75 cts., - - -	675	
Clothing 6 domestics, - - -	72	
Feeding do. - - - -	216	
Engineer, carpenter and cooper, -	500	
Total, - - -		$3,889

PRODUCE.

240,000 lbs. of sugar, at 6 cts., - -	$14,400	
900 galls. molasses, at 31 cts., -	2,790	
Total, - - ,		$17,190

Respectfully yours,

JOSEPH CLOUGH.

This estimate in respect to the comparative cost of labor is worthy of a passing notice. The average cost of importing coolies into these Islands, engaged for a period of five years, may be taken at $50 per head. Wages at $3 per month, and keeping, but very little exceed the cost of feed and clothing for negroes. The comparative cheapness, therefore, of cooly labor, must forever preclude the possibility of competition, in these Islands, of negro slavery.

As to the general adaptation of the soil and climate of these Islands to the growth and manufacture of sugar, there is no longer any question. Within the last year, on the Island of Kauai, the produce of about one hundred acres of cane has been ascertained to be 151 tons of sugar, with a proportion of molasses varying from 100 to 120 gallons to the ton, and the burden of cane per acre was not apparently superior to what has been observed in former years, and on other Islands. From one field, containing between 20 and 25 acres, the yield was 42 tons and upwards. This was regarded as an extraordinary yield, especially as the land had been cropped several times, some years previously. In Louisiana, one ton per acre is considered a large average yield.

In respect to markets, the locality of these Islands could scarcely be more favorable. The abundance of grazing lands, suitable for all kinds of stock; the salubrity of climate, and many other natural advantages, peculiar to the Islands, have been the subject of frequent observation. Nothing appears to be wanting but the requisite capital, skill and labor, which, if they have not been availed of in their full extent, are within the compass of man's control.

In conclusion, your Committee may hope the time is not far distant when, in respect to the question of remuneration, relating to this branch of industry, they may have it in their power to announce to this Society, (with all the assurance and exultation with which Mr. Bore's sugar boiler announced his success,) *it pays!* and that, instead of the pitiful figure of 700 tons,—the aggregate product of 1853,—they may be able to show an increase in some degree commensurate with the vast tracts of virgin soil now lying unoccupied.

R. W. WOOD,
W. A. ALDRICH,
H. HACKFELD.

The Committee to procure seed from sugar cane reported verbally, by the Chairman, E. P. Bond, who stated that no progress whatever had been made in arriving at the result desired; and read a letter from B. Pitman, Esq., a member of the Committee, which is appended:

HILO, 10th May, 1854.

To the Chairman of the Committee for producing seed from Sugar Cane.

SIR:—I had, last year, the honor to submit to you my opinion on the subject of causing the sugar cane to bear seed, in Hilo, and am this year more convinced of the impossibility of making it produce seed by artificial means. Having attentively examined the different sugar plantations in this district, I find the soil, at the depth of a few inches, to be a hard, stiff clay, produced probably by volcanic action on the substratum of tufaceous lava, or, by its decomposition, re-agglutinated into a firm clay. Such is the nature of the soil generally throughout this district, on the table portions of lands situate between the ravines, varying in depth according to its proximity to larger or smaller ravines. It would therefore be impossible, from the nature and composition of the soil, to create such a chemical affinity as Mr. Teschemaker proposes; and unless such combination be effected, I can well conceive that there cannot be either seed or pollen. These remarks, however, apply particularly to Hilo. There are portions of South Kona and Puna where it might succeed; yet even then it would remain to be tested whether such seed would grow in so humid an atmosphere as Hilo possesses; or whether, by re-planting the tops of such plants here, they would not deteriorate. It would undoubtedly prove a most

beneficial acquisition to the Hawaiian group, could the seed be produced; but it must be in a drier climate than that of Hilo.

Most respectfully, your obedient servant,

B. PITMAN.

REPORT OF THE COMMITTEE ON COFFEE.

By R. C. Wyllie.

To the Hon. W. L. Lee, King's Chancellor and Chief Justice, President of the Royal Hawaiian Agricultural Society, &c., &c., &c.

Rosebank, 8th June, 1854.

Sir:

As the Society did me the honor of constituting me Chairman of the Standing Committee on Coffee, for the present year, along with B. Pitman, P. Cumings, G. Rhodes and S. Reynolds, Esquires, and Dr. T. C. B. Rooke, in proof that I have at least attempted to obtain some useful information, I annex, marked No. 1, copy of a circular letter, which, on the 6th of May last, I addressed to each of the gentlemen above named, as well as to yourself, you being then on the Island of Maui.

I append, marked No. 2, the reply which, on the 14th May, I received from Dr. T. C. B. Rooke. So far as I can judge, his remarks are of practical importance.

I also append, marked No. 3, copy of the reply which, on the 30th May, I received from Mr. Rhodes. His observations will be read with much interest, especially his replies to my queries Nos. 19 and 21.

On the 5th inst, I received from Mr. Pitman the letter of which I annex a copy, marked No. 4. In his opinion, the essay on Coffee by Mr. Rhodes, recorded at page 54, of No. 2, Volume 1, of the Transactions of the Society, embodies all that can be said on the subject.—I myself was much pleased with that essay; and the importance of the subject induced me to make my communication on the actual outlay and return of certain coffee estates on the Island of Ceylon, with forms in which the accounts are kept, published by me in the Polynesian No. 27, of 15th November, 1851.

By reverting to the Polynesian, of 26th February, 1848, you will see certain *pro forma* account sales of coffee and of sugar, imported

here from Manila, from which I inferred that the former could not be imported from the Phillipine Islands, so as to sell here with a profit, at less than about 9 cents per lb., nor the latter at less than 5 1-4 cts. per lb. These *pro forma* account sales were furnished by me, with certain remarks, on which Mr. Hitchcock framed his editorial, adding other observations of his own.

I received, on the 8th inst., the answer from Mr. Cumings, of which I add copy, marked No. 5. It is well worthy of perusal, with reference to my queries, and the other replies to the same.

I am inclined to believe that in regard to the article of coffee, we *can* compete successfully with other importers in the markets of California and Oregon, and in fact in all markets, excepting those of countries where coffee is a staple production.

And I further add, marked No. 6, copy of Mr. Reynolds' reply, of 7th June, which I received this morning.

From what I have been able to observe, I have long thought that the best flavored coffee is that which comes from the leeward side of Hawaii. Of that coffee the berry is small, brittle and shabby looking. So are the berries of the celebrated Mocha and Yungas coffees, which, nevertheless, are the best in the world. Judges unacquainted with this fact, would be apt to consider the largest and best formed berries the best coffee, and award the prize accordingly. Superior excellence is to be determined by superior flavor alone, of which I hold that ladies, distinguished for their coffee making, would be the best judges. Humbly begging the pardon of Mrs. Dominis for placing her at the head of ladies so distinguished, I would say, respectfully, that were the prize for coffee left to the decision of a well selected Committee of ladies, presided over by her, it would be awarded in the justest possible manner.

With the highest respect, I have the honor to be,

Sir,

Your most obedient humble servant,

R. C. WYLLIE.

P. S. I crave leave further to request your attention to what the celebrated statist and political economist, Dr. Bowring, writes of the price at which sugar cane can be produced in Java, recorded at page 13 of my Report as Minister of Foreign Relations, marked No. 7, of which I enclose copy. R. C. W.

No. 1.

[CIRCULAR.]

ROSEBANK, 6th May, 1854.

MY DEAR SIR:

As you are named with me on the Standing Committee on Coffee, appointed at the last meeting of the Royal Hawaiian Agricultural Society, I beg that at your earliest convenience you will furnish me with your remarks on the following points, viz:

1. What soil, from your observation, you would recommend as best for the cultivation of the coffee tree.

2. The best mode of planting, weeding and rendering the tree productive.

3. How far apart the trees should be planted.

4. How long it is after being planted before the trees begin to bear, and how long they will continue to bear.

5. The average production of each tree, when in full bearing.

6. Average daily wages of native laborers employed on coffee estates; average daily expense of feeding them; average daily wages of Chinese coolies, and average daily expense of feeding them.

7. Average cost at which coffee can be raised per pound.

8. How many coffee trees can one acre of land bear?

9. How many coffee trees can one laborer take care of?

10. What extra assistance, beyond the regular laborers, is required during the picking season? Can women or boys be procured? What wages would be given them?

11. At what season of the year does the picking commence, and how long does it last?

12. Best mode of drying the coffee and preparing it for market.

13. Proper mode of packing it, and how many pounds each package should contain.

14. How many hours do laborers work on coffee estates per day? What periods are fixed for meals? What time is allowed for meals? At what hour do laborers commence their work in the morning, and at what hour do they leave off in the evening?

15. Which is the most productive, native labor or Chinese labor?

16. How are the laborers lodged on coffee estates? How many men are usually lodged in one hut? What is the cost of erecting

such a hut? Are they allowed to cultivate any ground for themselves, or to keep poultry, pigs, &c.?

17. How much land, more or less, exists on the Island of ———, susceptible of cultivation for coffee?

18. What are the chief obstacles to a more extended cultivation, and what suggestions can you make to remove them?

19. What measures would you recommend to encourage a more extended cultivation?

20. What injury is done to the young trees by grubs, worms, or insects of any kind, and how can that injury be prevented?

21. Do the natives use coffee; and if they were to use it, would its use tend to supersede the use of awa and those deleterious intoxicating compounds, to which they are said to be addicted in some places?

You will oblige me by returning an answer to each of these questions, to the best of your knowledge, experience and observation, placing the number of the question in the margin, so that it may clearly appear to what question your remarks apply.

As the next meeting takes place early in June, it is desirable that your reply should be received by me at the earliest date possible.

I remain, my dear sir,

Yours truly,

(Signed,) R. C. WYLLIE.

No. 2

HONOLULU, May 13, 1854.

SIR:

In answer to yours of the 6th inst., enclosing twenty-one queries, relating to the cultivation of coffee on these Islands, I would state that I have not been engaged in that branch of agriculture since 1846, and am therefore unable to answer some of your questions as being ascertained by my own personal observation, and have therefore to depend on the best information I can at the moment obtain.

Query 1. On the Island of Oahu, the best places for planting coffee are in the sheltered ravines, on the declivities and the alluvial deposites immediately at the foot of the mountains, having easterly or westerly aspects, where the soil is composed of the debris of lava and decayed vegetable substance, especially that of the kukui tree, (*Aleu-*

rites Triloba,) and elevated about 700 to 1,000 feet above the sea. If on the plain, it requires a light alluvial soil, well irrigated, and in all cases sheltered from the trade winds.

2. The only locality in which I have reared coffee has been in the mountain ravines. The following is the method I pursued there, primitive no doubt, but the most successful of all the ways I tried. I first selected a sheltered ravine, having a growth of large kukui trees. I then proceeded to grub up and clear away the undergrowth of shrubs and weeds, and to lop off the lower branches of the large trees, which I left standing for the present, leaving also the uprooted weeds strewed over the ground, to prevent evaporation. I then loosened the earth in holes one foot square and 10 inches deep, at intervals of 9 or 10 feet; (I first tried 6 feet but found that it was too close;) in each of these holes I transplanted, either from the nursery or from underneath the old trees, three young "shoots,"—when about 9 or 10 inches high they transplant best. The ground should be weeded about once a month, with the hoe, or what is better for a native, a common blubber spade or oo. When the "shoots" become vigorous, remove the two weakest. Keep the ground well weeded, and when the plants are 18 or 20 inches high, fell the kukui trees, leaving a row on each ridge for shelter from the wind. They will not materially injure the plants in their fall, and if cut down in early winter, and cut into short pieces, will in a few months be rotted into manure, and materially assist the growth of the young plants.

3. As I have before stated, 9 or 10 feet interval each way is best for hill and plain.

4. The trees generally commence bearing in about three years, but I have not yet ascertained how long they will continue bearing, when taken care of.

5. The quantity of fruit a tree bears, depends upon the situation, soil, irrigation, care, and various other circumstances. The late Antonio ————, at Waikapu, had trees which produced above 20 lbs. annually, but this is an exception to the general average, which, in favorable situations, will not *exceed* 2 lbs. to each tree, on the plain, and not so much on the hill, where the tree has more leaf. In some localities the seasons alternate good and bad crops.

6. The amount paid natives for labor varies, (as I am informed,) on the other Islands, from 18 to 25 cents per day, with a house to live in, and find their own food. I do not think that steady labor could be procured at the above price, on the Island of Oahu. The proprietor of one of the best arranged plantations, who is now in the city, informs me that his cooly labor cost him about 30 cents per day, including board and lodging.

7. By the same authority I am informed that the cost to him of raising coffee is not less than four cents per lb.

8. Assuming an acre to be thirty-five fathoms square, superficial measure, from 500 to 530 trees could be planted per acre.

9. It depends upon the nature of the land under cultivation, how much one man can take care of. I cannot answer this.

10. In the picking season you require all procurable labor, especially that of women and children; the wages vary from 12½ cents per barrel of berries, upward.

11. The picking season, without much change, commences in November and terminates in January.

12. The method of drying the coffee must always depend upon the climate of the locality in which it is raised; the manner of preparing for the market also depends upon what market it is intended for; for instance, I have had a higher price awarded in Liverpool for coffee sent there in the parchment, than others had for cleaned coffee,—as much as 6*s*. per cwt. in advance,—but the freight is of course higher.

13. The quantity in each package also depends upon the market it is intended for.

14. The hours of labor are different on each plantation, and are also dependent on the weather.

15. This question of whether native or coolly labor is the most valuable, is difficult to answer. As far as I can ascertain, it amounts to this. One person, by his knowledge of native character and his method of management, will get more labor done, and corresponding results, by one native, than another will out of five. The same may be said of the coolies. One man that can get along with the coolies, cannot get along with the natives, and *vice versa*. With both races, I believe, as much depends upon the employers as upon the employed.

16. The laborers on Mr. Titcomb's plantation are lodged in native

houses, generally six in each. The cost of these varies extremely on different islands and localities.

17. There is much land, accessible and inaccessible, on the Island of Oahu, fit for the cultivation of coffee; but how much it is impossible even to estimate.

18. The chief obstacles to the more extended cultivation of coffee, are the want of capital to carry it on on a large scale, the dearness of labor, and the expense of transport. How can coffee which costs 4 cents at the plantation without other charges of portage, freight, packages, &c., &c., compete with that of Manila or Brazil? The converse is the remedy, which cannot be applied until the price of the staple food of the workmen is more moderate. As I view it, the price of food regulates that of the laborers' pay.

19. A legislative question this, but the preceding observations, No. 18, are equally applicable here, especially to the Island of Oahu.

20. There is little injury done to coffee by the worms or grub, and that only when young; careful weeding will generally prevent this.

21. The natives are not generally fond of coffee; but they will use it if they cannot get tea, of which they are extremely fond. Its use would not interfere with that of awa.

Such are the hasty answers to your questions with which my memory has furnished me. As I before observed, I have not been lately engaged in the cultivation of coffee, and am not aware of the method now used. I have the honor to be

Your most obedient servant,

T. CHAS. BYDE ROOKE.

To R. C. Wyllie, Esq., &c., &c., &c.

No. 3.

Replies to the Questions in Mr. Wyllie's Circular Letter of May 6, 1854, relating to the Cultivation of Coffee.

1. The soils best adapted to the cultivation of coffee are, in my opinion, alluvium, rich vegetable mould, and, generally, the debris from the mountains. The situation for a coffee plantation should be chosen, if possible, in a spot sheltered from the violence of the trade winds, with a moderately moist climate, and with the soil at least three feet deep.

2. The best method of growing the coffee tree, according to my present experience, is from young plants about two years old, which are drawn, trimmed of their tap and lateral roots, cut to a length of about two feet, and planted at a depth of about eighteen inches, thus leaving six inches above the earth. Plants of the above description are readily found about old plantations, and the superiority of the trees raised from them over the common seedlings is easily discernible by a practised eye. When these plants cannot be obtained, the seed should be sown, and the young plants treated as described by Mr. Duncan, in his Essay on the eradication and prevention of worms, read before the Royal Hawaiian Agricultural Society, in 1852. The general method of extirpating the weeds is with the common plantation hoe. In dry seasons, when the trees are young, also, for a few months after crop, when they have arrived at maturity, a single horse plough may be driven through them with good effect. The tree, in my opinion, after its arrival at maturity, is rendered more productive than it otherwise would be, by a light annual pruning.

3. At three years old from the seed, the tree bears a few berries; at five years old it attains its full bearing point; and, according to the works to which I have had access, it continues bearing to the age of thirty, and sometimes fifty years.

4. I consider eight feet between the trees to be a very good distance, but in a rich soil, with abundance of labor and land, I think nine feet apart would be preferable; under any circumstances I would not plant at less than eight feet distance.

5. The average production of each tree ought not to be less than two pounds. Much depends upon the seasons, method of culture, &c. It frequently happens that the crops are alternately large and small. I have heard of as much as thirty or forty pounds being obtained from a single isolated tree, but I apprehend that no such amount, nor even an approximation to it, can be obtained on a plantation.

6. The wages paid to native laborers are twenty-five cents per day; they feed themselves. The wages paid to the coolies are twelve and a half cents per day, and the expense of feeding them amounts to twelve and a half cents more; so that, independently of the cost of introduction of the latter, the cost of employment of the two races is

about equal. When regular communications are opened between these islands, Manila and China, I have no doubt the daily expense of feeding the coolies may be reduced to nine or ten cents each.

7. According to an estimate I enclosed to you on the 7th October, 1852, and which I see no reason to alter, six and a half cents per lb. is an approximation to the cost at which coffee can be grown on these Islands.

8. At a distance of eight feet between the trees, 680 can be grown on an acre, or of nine feet, 537.

9. In dry climates, one laborer ought to attend to five or more acres of land, or say 3,000 trees; but in moist climates, where the trees grow rapidly, and labor cannot be constantly performed out of doors, I think it doubtful whether the average will be higher than three acres, or about 2,000 trees, for each laborer.

10. Ordinarily, in crop time, as many more persons are required to collect the coffee as are engaged in its cultivation. A diligent picker can gather about three bushels, equal to thirty pounds of merchantable coffee, in one day; but the persons engaged seldom work steadily, nor do they work more than five days in the week; so that a larger number is required than would be the case if they worked steadily. Picking coffee is an employment generally liked among the natives; men, women and children seek it in the crop time; they are paid at the rate of twenty-five cents for a measure of about three bushels.

11. Picking commences from the beginning to the middle of August, and lasts till the middle of January.

12. The coffee is divested of its outer skin and pulp, by being passed between a cylinder, on which a stream of water is kept falling, and a bar of wood lined with metal; it is then soaked for twenty-four hours, washed, dried and passed through the peeling mill; by this last operation it is divested of the parchment and silver skin; it is then winnowed and packed for market. Coffee requires five or six days uninterrupted fine weather to cure it; consequently, when the crop is large, extensive terraces or platforms are required to spread it on; but it is difficult to find anything at once durable and cheap, that will answer this purpose. I have hitherto used terraces made of common stones, plastered with mortar. The great objection attending these

is, that being exposed to the action of the weather, they frequently need repairing. Sand and small pieces of mortar are broken off and mixed with the coffee, rendering it more difficult to be cleaned; besides, lime is not always obtainable. The system of drying on mats is at once expensive and troublesome, as the mats made by the natives are very frail, and at night, or in the event of a shower, they require housing as well as the coffee. Could flagstones, or other materials that would bear exposure and rough usage, be imported, and sold at a cheap rate, they would be of great service to coffee planters.

13. The packages I prefer for coffee, are the mat bags brought from Manila or China; double, they cost twelve or fourteen cents, and will contain from forty to seventy pounds. Formerly, I used bags made by the native women, of rushes, which grow all over the Islands. A double bag of this description cost twelve and a half cents, and contained about 30 lbs.;—latterly they have not been obtainable. I have used Osnaburg for bagging, but cannot recommend it.

14. When the days are long and the weather is fine, the laborers commence work in the morning at half past five, and leave off in the evening at six, thus, including meals, working twelve and a half hours per day. During the short days, they commence about half past six, and leave off about half past five; so that the length of their day's work, also including meals, is then eleven hours. They are allowed half an hour for breakfast, at 8 A. M., and an hour for dinner, at 1 P. M. Natives seldom work on Saturday, except in crop time.

15. Chinese is in my opinion, preferable to native labor; in fact the latter is now difficult to be obtained. The native does not like regular and systematic labor; it is irksome to him. He will seldom enter into an agreement to work for a specified time; and if employed by the day, at the very time his services are most required, he will frequently absent himself, or refuse to work without higher wages. Under a foreman, the native is perhaps able to perform more work than the Chinese, but he does not bear to be left by himself. The cooly, if left alone, will continue his work, but he is frequently difficult to manage, and very quarrelsome.

16. The natives on the estate of G. Rhodes & Co. are generally lodged in huts of about 10 by 14 feet, built in the native fashion and

thatched. A man and his wife generally occupy one hut; sometimes there will be in these huts, besides their regular occupants, men or women, or both. The houses are generally built by themselves, the proprietors furnishing the materials. There are several houses on the estate built by the proprietors, for which they cannot find occupants. All natives living on the estate are allowed kalo and other lands, besides pasture for their horses, rent free; with the understanding that when their services are required, they shall work at the customary rate of remuneration. The coolies occupy houses of a better description, which have been built by the proprietors of the estate, at a cost of about $100 each. There are two of these houses, each 15 by 30 feet; they are framed, thatched at the sides, with the roofs boarded and covered with felt. Nine men occupy each of the houses; they are allowed to take in and cultivate as much land as they can. Some of them keep poultry and pigs, and two or three own horses.—Some are very industrious, and raise large quantities of vegetables. I long since promised that if any of them should find native wives, I would build them separate houses; but there seems no inclination among them to marry. They roam about a great deal at night, and frequently become diseased.

17. I am unable to form any estimate as to the quantity of land on this island capable of the cultivation of coffee. The tracts that are adapted to it are generally in the immediate vicinity of the mountains, mostly covered with forest trees, at present difficult of access for want of roads, and distant from any port from three to twelve miles.

18. The principal obstacles to a more extended cultivation are, in my opinion: 1st. The scarcity of settlers with sufficient capital and agricultural knowledge to undertake any operation of importance.—2d. The insufficiency of agricultural laborers; and 3d, The high rate of interest obtainable for money, for purposes of speculation. It is my belief that if a plentiful supply of cheap capital could be introduced into the country, a large quantity of it would necessarily and profitably find employment in agricultural enterprises.

19. The measures I should recommend, generally, to extend agriculture, are the encouragement of settlers and the visits of the shipping, by the removal of all restrictions on commerce and manufac-

tures; by stated periodical sales of Government lands, or fixed prices, upon payment of which any applicant may obtain them; and by entire freedom of the Government mountain lands to all persons desirous to cut timber or firewood. Although, as a general thing the natives are very indolent, there are amongst them many industrious and enterprising men. If markets could be opened for these people to dispose of their produce, the sight of their prosperity would undoubtedly stimulate others to follow their example, and abandon their lazy habits.

20. At Hanalei, the coffee tree does not suffer from the attacks of insects of any kind.

21. But very few of the natives with whom I am acquainted use coffee; those that do are generally industrious and respectable in their sphere; nor am I aware that many in my neighborhood use awa or any intoxicating drink. To elevate the native character, steady employment is, I feel persuaded, one of the very first requisites. Unfortunately, the inculcation of this doctrine has been but too much neglected. I write from experience. The natives are docile and good natured, but in my opinion, they have never had a fair chance.

The cultivation of coffee is as easy, pleasant and profitable to natives as any I know of.

GODFREY RHODES.

No. 4.

HILO, 10th May, 1854.

R. C. Wyllie, Esq., Chairman of the Committee on Coffee.

SIR:

It occurs to me that *all* which can with effect be said on the subject of coffee has appeared before the Society in the able and most admirable essay, furnished by Godfrey Rhodes, Esq., and recorded in the "Transactions" for 1851;—not a point, in my opinion, having been either slighted or neglected by that gentleman; and so thoroughly convinced am I that his *theories* combine *all* that is needful to render the *practice* of coffee growers productive of the most advantageous results, that I must plead guilty to a certain lukewarmness on the subject. It is good, I opine, to "let well alone," in cases where reason

dictates that a better result cannot possibly attend our further endeavor; with which sage axiom, (as I hope you will indulgently consider it,) I will further merely remark that our trees and young coffee plants are all in apparent thrifty condition, and that the blight or fungus, (to which I had the honor to allude in a communication to Mr. G. Rhodes, and to which he courteously replied, in his Report in the "Transactions of 1852,) although still indulging its parasitical propensity, does not, I am happy to remark, appear thus far to have any tendency to injure the trees; although possibly a better yield would be the consequence following its disappearance.

I have the honor to be, sir,

Yours, very respectfully,

B. PITMAN.

No. 5.

NAPOOPOO, May 30th, 1854.

MY DEAR SIR:

Your much esteemed Circular, dated Rosebank, May 6, 1854, has just come to hand.

I am very sorry to say that I am one of the most ignorant persons you could have applied to for information respecting the cultivation of coffee. All that I know about it is from the little experience I have had in carrying on the small plantation in which I have an interest. I have never been on any other coffee plantation. However, I will answer your questions, so far as I am able.

1. I do not know what kind of soil to recommend. Coffee flourishes in all soils, or no soil, among the rocks, provided there is sufficient moisture. I think the coffee tree would not flourish at an elevation of more than 2,000 feet.

2. Loosen the earth to the depth of one foot, (we have to do it by hand, the land being too rocky for the plough,) let the weeds dry, cover the ground with fern, six inches thick, measure off for planting, remove the fern, loosen the earth to the depth of 15 or 18 inches diameter, say 3 feet; plant the tree, leaving the roots in their natural position as far as possible; then replace the fern. If treated in this

manner, the ground will not require any farther attention for two years.

3. Eight feet apart.

4. If good, healthy trees are planted out, say two years from the seed they will bear in one year; that is, in three years from the seed. On the 26th of this month,—May, 1854,—I saw four coffee trees that were in full bearing in September, 1832, and were some 6 or 7 feet high at that time, (1832.) They are now as fine, healthy looking trees as any I know of.

5. Do not know.

6. Average daily wages of natives, 20 cents, food 12½ cents,—32½ cents. Average daily wages of coolies, 17 cents, food 16 cents,—33 cents.

7. Cannot answer.

8. See answer to question 3.

9. Cannot answer.

10. No assistance is required beyond the regular laborers. Women and boys cannot be had.

11. The season for picking commences in October; coffee all off by the first of January.

12. Dry the coffee whole, as it is taken from the tree. We pound it in mortars; would use machinery if we knew what to get.

13. In sacks,—100 pounds in each.*

14. Work from sun to sun. Saturdays, leave off work at 3 P. M. Breakfast at 7, dine at 1, supper after they quit work. Three-fourths of an hour is allowed at breakfast, one hour at dinner.

15. Coolie labor the most productive.

16. Eleven in one house. Walls stone, roof thatched. Berths like those on shipboard. Cost $50. This is for the coolies;—natives in a separate house,—have things their own way, native fashion. Cultivate land if they choose;—have pigs and poultry.

17. Cannot answer.

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*My correspondents in California recommend for that market small bags, of at most 50 lbs. each, very carefully and nicely put up, marked, &c., and say that from want of attention to these *minutiæ*, and to proper cleaning, Sandwich Islands coffee has never had a value in that market proportionate to its superior flavor.—R. C. Wyllie.

18. I am not aware of any obstacle.

19. *Good roads.*

20. Very little injury is done to coffee trees by insects; during the month of May, a tree here and there may be very slightly injured by insects. I do not know what they are, nor how to stop them.

21. Natives are very fond of coffee and tea; will drink both, if made for them, and sugar furnished. I think the majority of natives would leave tea, coffee, sugar and all, for anything that would intoxicate, provided they could get it *malu.*

The foregoing remarks are intended only for our little district of Kona, Hawaii. If you think they can be of any service to the public, you are at liberty to make them known.

I am, my dear sir,

Your very obedient servant,

P. CUMINGS.

R. C. WYLLIE, ESQ., Chairman of Com. on Coffee.

No. 6.

HONOLULU, June 7, 1854.

SIR:

In regard to raising coffee, I am without any practical knowledge. I know nothing of the best soil for planting the trees.

Two years ago, Benjamin Pitman, Esq , at Hilo, picked upwards of thirty pounds from one tree, which he sent as a sample to the Royal Hawaiian Agricultural Society's Fair. From the fact that Hilo has more rain than other places, I conclude moist soil and rainy weather are best for coffee.

Of the expense of preparing and cultivating an acre, until the trees begin to bear, I have no knowledge from which to give a correct statement.

Believing Messrs. Rhodes, Pitman and Cumings will give all the information on the various particulars in raising coffee, from their practical experience, I trust an able Report will be laid before the Society.

Your obedient servant,

STEPHEN REYNOLDS.

To R. C. WYLLIE, ESQ., Chairman of Com. on Coffee, &c., &c.

No. 7.

In a letter dated London, 23rd August, which I had the honor to receive from the justly celebrated John Bowring, L. L. D., he writes as follows :—"I spent a few weeks in Java and its neighborhood, on my way home. The productive sources of these Islands are wonderfully great, and *unless you can produce sugar at something like ten shillings per cwt., I do not think you can expect to compete with them. Java is so well supplied with labor that the importation of Chinese Coolies is now prohibited.*"

The Select Committee appointed to nominate judges for the Fair, to be held to morrow, made the following report, which was adopted:

REPORT OF THE COMMITTEE ON JUDGES FOR THE FAIR.

The Committee appointed to nominate persons to act as judges in the awards of premiums, for articles which may be exhibited for the Annual Show and Fair, held at Honolulu this day, would respectfully recommend the following persons :—

On Cattle.—L. L. Torbert, J. Piikoi, R. Moffitt, G. Risely, J. Janion.

On Horses.—H. Robinson, Liholiho, L. H. Anthon, H. S. Howland, C. W. Vincent.

Sheep and Swine.—J. E. Barnard, J. Ii, S. P. Ford, C. B. Andrews, John Montgomery.

Poultry and Dairy.—S. C. Damon, A. Paki, John Ladd, Gust. Reiners, T C. B. Rooke.

Sugar, Syrup and Coffee.—S. N. Castle, W. B. Rice, W. A. Aldrich, James Makee, Robert Clouston.

Grain, Flour, Seeds and Field Crops.—B. F. Angel, R. W. Wood, R. Armstrong, T. Mossman, H. Rhodes.

Vegetables and Flowers.—A. B. Bates, E. P. Bond, G. Rhodes, P. Cumings, D. Baldwin.

FLOWERS.—E. G. Beckwith, E. Hoffmann, G. H. Luce, B. W. Field, J. Fuller.

FARM IMPLEMENTS, DOMESTIC MANUFACTURES, &c. &c.—Stephen Reynolds, J. H. Wood, D. M. Weston, N. M. Mitchel, James I. Dowsett.

The presentation of Reports of standing committees was resumed, and the following were read and accepted.

REPORT OF THE COMMITTEE ON INDIAN CORN.

BY WM. REYNOLDS.

The following Statement is respectfully submitted by the Chairman of the Committee upon Corn.

MALUMALU, Kauai, May 15th, 1854.

The attempts to cultivate corn, upon this Island, within the past year, that have come to my knowledge, have met with very little success.

The climate and the soil seem favorable enough for the growth of this grain, but its insect enemies are so numerous and voracious as to set at defiance every calculation as to the best period for planting, and every precaution for the preservation of the crop.

The nights are too cold at our elevation, to admit of planting earlier than May. At this time last year, the heavy rains had ceased, and with them, the cut-worm disappeared ; now, we have had a dry spring, and the rain coming later, that worm is just ready, doubtless waiting for the corn to show itself, to fall upon it tooth and nail. However, our ground being all prepared, we have planted and shall take the risk.

The caterpillar is to be feared at any time of the year, except, perhaps, during the winter months, and last season a new enemy entered the field. When the corn was going into ear, small and colored moths came in clouds, and deposited their eggs upon the stalks, which in a few days were so completely covered with minute insects that at a little distance, they seemed to be encrusted with shells. These invaders speedily extracted most of the juice of the plant, the leaves withered, the stalks became black and slimy, the ears ceased to grow, and the final yield was next to nothing.

A neighboring field at Lihue, escaped from these fatal visiters, and produced a fine crop of large-eared and large-grained corn.

Two Californians commenced operations at Kolau last spring, planting a number of acres in corn, but the cut-worm and caterpillars destroying three successive sowings, they abandoned the place.

Small crops have been gathered in that region, at Koloa and at Waimea within the year, but thus far, there has not been sufficient success with corn to allow its being classed with the staple productions of this Island.

I cannot say what ought to be the yield per acre, with all things favorable.

After breaking up the land, the cost of cultivating, harvesting, and preparing for market, is but trifling, particularly if corn-planters, cultivators and shellers are used; the freight to Honolulu has hitherto been a much more expensive matter, out of all proportion to the market value of the corn.

Hon. Wm. L. Lee, President R. H. A. Society.

P. S.—Since writing the above, the cut-worm, has eaten the best part of my field. Mr. Wideman's has escaped and is thriving finely.

It has been stated that the cut-worm will abandon ground that has been cultivated for some time, but certainly he is in no particular hurry to quit "these diggins." It is nearly two years since the land was broken up; since then, it has been re-ploughed twice, harvested four times, and constantly stirred by the cultivator, yet the cut-worm re-appears this season, in the same spaces, as were most favored by him last year.

I am now planting arrowroot in the furrows vacated by the corn, and shall have 20 odd acres finished next week. It is rather late for this work, but the natives say it will grow well and be ripe at the usual time.

W. R.

May, 24th, 1854.

REPORT OF THE COMMITTEE ON SWINE.

By C. B. Andrews.

To the President and Gentlemen of the Hawaiian Agricultural Society.

A Report "on Swine," requires a better acquaintance with the animal than has come to my observation. In common with most persons, your reporter, has a better knowledge of the good qualities of their flesh, than of the manner of obtaining it. Praise of sweet pork is reiterated by all who eat it, whether feasting on the suckling roaster, on "spare ribs," or the great hog with fat like whale's blubber. Those of us who have eaten of the lank genus at these islands, have been ready from its insipidity, to deny its species.

But "pig is pig" every where, despite difference of taste. His flesh is too unlike that of any other quadruped, (except dog,) to be improperly classed.

It is their great variety that has almost transformed the extremes of swinish character to different classes of animals.

We learn first of him as an unclean beast whose flesh was forbidden to the Israelites. Afterwards we are told of the wild boar in the forests of Asia, whetting his tusks on trees and boughs, a most dangerous opponent to man or beast. In many countries he was an animal of the chase, hunted for danger's sake, and for gammon. Again we read of him, as fattened upon mast in the forests of Europe, and whose flesh thus made, was esteemed a great delicacy on the tables of the rich.

Thenceforth a generation of the animal has come down to our day, by cultivation so regenerated from the original savage, as to become a very respectable tenant of the farm, a genuine domestic animal.

But piggie will degenerate as well as improve. Carried to the woods of America, we find a new strain with long nose, flat sides, and bearing the significant name of "windcutter."

Such he was in Western Pennsylvania. The worm-fence of rails was no fence against him, for being "flat like a flounder," he had only to make a pass through sidewise. The way to fence against him, farmers said, was to split out rails from winding trees, and lay them to twist together. Then as the windcutter made a pass through,

he would be carried around by the twist, out on the the same side he went in.

Pork-fattening in Michigan would indicate that the windcutter was among the first breeds there. It was told of the squatter that he would first build a pen as tight as he could ; then as he caught and penned his pigs, he would tie a knot in their tails. If one should find his way through a crack in the pen, he would hang by the knot in his tail and squeal, which would fetch the owner to return the pig, and stop the crack. Then after their skeleton frames had soaked in Michigan mud until they would hold swill, the process of fattening would proceed more kindly.

In pork raising the great thing desired is to get the best pork in the most economical manner.

To accomplish this, breed from those which will accumulate the most flesh and fat out of the least food.

The Chinese are capable of teaching us in this respect. Pork to them is the same as fish to Hawaiians, and an unmixed China pig is worth studying by the pig-grower. He is the very essence of economical growth, as may be seen in the short nose and limbs, and rotund body, all indicating to a glance, that food given to him will be disposed of to the best advantage. The English bred swine, at first with the idea of making large hogs,—but now, as do the Chinese, with the idea of making pork economically.

Pork growers around Cincinnati, the greatest pork mart in the world, have discarded breeding large hogs as unprofitable. Out of the hundreds of thousands slaughtered there yearly, few exceed 250 pounds weight, and fewer still weigh less than 200 lbs.

Growers there breed from those which are small boned, barrel shaped, and having short noses and legs, and come quickly to maturity, without reference to name or blood. Almost all of them are white.

Pork can be raised economically nowhere on food that commands otherwise a good market. Most hogs eat up more than their bodies will fetch, and many a man has fed to his swine twice or thrice the worth of food that his pork would command after they had eaten it. Near a city where most kinds of produce are in demand for human consump-

tion, nothing but house or dairy slops, and butcher's offal, can be fed economically to pigs.

In this country feed the best pig for fattening in the best locality, on corn, potatoes, or taro, raw or cooked ; and the nominal price of the food he eats up to the time of slaughter, will exceed the price of his flesh all told. Where roots can be raised, more than natives consume, and their freight to market is large in proportion to their worth, pork can be raised to good advantage.

The price of pork therefore must ever be high here, until the plow increases vegetable food far more than is needed for human consumption, which the *oo* cannot do.

REPORT ON TOBACCO.

By A. Archer.

Pokii, June 3d, 1854.

Hon. Wm. L. Lee, *President of the R. H. Agricultural Society.*

Sir :—

As chairman of the committee on tobacco, I feel it my duty to present the following for the consideration of the Society, although having been but one year engaged in its cultivation, my report cannot be expected to be so complete, as those to be found in publications devoted to the subject. As, however, the mode of agriculture best adapted for one country, does not always prove the best for others, I will give the experience of the Kauai planters for the benefit of those who may wish to begin the business on any of these islands.

It was in the beginning of 1852, that Mr. J. R. Opitz, first determined to plant tobacco at Waiawa, a place about four miles to the westward of Waimea ; but before all his preparations were made the season was so far advanced, that he could not raise his plants, but was obliged to purchase them from the natives. He did not get all his plants set out till the middle of March, a very late period for a place where rain seldom falls from the end of January till the middle of November. The year '52 however, while very dry on other parts of this Island, proved very rainy on the western side, and he

had a beautiful field of tobacco ; from which however, he derived no advantage, having made it into cigars before it was properly cured. During the summer of the year in which Mr. Opitz had reaped his first crops, Mr. Gruben determined to begin another plantation at Pokii, (a piece of land adjoining Waiawa) and of course both he and Mr. Opitz, who was not daunted by his first failure, gave all their thought to finding out the best method of curing tobacco. They planted in February and the beginning of March, but the year '53 proved so much drier than the previous one, that they had to go to the extreme of watering by hand, to get their plants to grow. In the beginning of June, when Mr. Gruben began to cut his crop, he purchased a small quantity of tobacco of the previous year's growth from a native, which on making into cigars, he found to burn better, than any other Kauai tobacco he had then seen. As getting the tobacco to burn was the great difficulty, he at once applied to the native from whom he procured the tobacco, for his method of curing, and put the whole of his crop under the process the native had used, confident that his tobacco would be fit to manufacture into cigars soon after it was housed. It was at this time I joined him, in the full belief, that we would have had cigars in the market before now, but we had to suffer disappointment, and have now discovered, that the tobacco purchased from the native, did not owe its burning to the manner in which it was cured, but to its age ; and it is only now that our last year's crop is beginning to improve. It will yet be several months before we can venture to put it in the market.

Last year did not however pass without teaching us some things that will be to our advantage for the future. Mr. Gruben's crop was larger than he expected, and he had not enough room to put the last of it under cover. He therefore hastily put up a shed, that was so thinly covered, as not completely to exclude the sun, and we have found that the tobacco cured in it, is superior to that which was cured in a close house. Of this discovery we have of course taken advantage in building our curing-houses.

We had this year intended to plant 20 acres, but from the great want of rain we only got in 16, which we have been obliged to raise by irrigation. This of course, has been a very great expense, but

now, that we have become acquainted with the seasons, we do not think that we shall again be obliged to have recourse to it. Our heaviest rains fall during December and January, and by raising our plants by irrigation, (one half acre of plants will plant out 20 acres,) we can have them ready to set out by the beginning of December; and such will in future be our method. A great advantage that will accrue from early planting, besides obviating the necessity of hand-watering, is the immunity we then enjoy from both the cut and tobacco-worm, neither of which appear before March.

Having mentioned some of the mishaps through which we have arrived at what we know about the cultivation of tobacco, I will state as briefly as possible our present method.

And first I would say a few words, as to the best locations for growing tobacco.

My knowledge of these islands is confined to Oahu and Kauai, but presuming that all of them are affected alike by the change of seasons, my remarks may probably apply to the group.

I should then say that the only part of these islands, that will produce good tobacco, is the southern and western, or leeward side. In general the leeward side of these islands present a very barren appearance, but this is not owing to the greater poverty of the soil on those parts, but to the want of rain during the summer months. I believe that the rest the ground enjoys during the long drought, enables it to produce a better crop during the rainy season, than can be got from those parts where rain is general during the year; in proof of which I would mention the fine corn grown at Waialua, Oahu, and Waimea, Kauai. The very best soil should be chosen for tobacco, and one can have no better guide in looking for such than observing the weeds that grow on it, particularly the castor-oil, and bur, (native kikania.) Where weeds grow well, we may feel sure, that most crops will grow with proper care. Having chosen ground, it ought to be carefully ploughed before the rainy season sets in, and a place set apart for a seed-bed, which ought to have more than common attention bestowed on it, so as to have it well broken up. If the seed-bed could be enriched by having goats or sheep penned on it, during the summer, it would be a great advantage. Tobacco seed is very

fine, and it would probably be best, to mix it with double its quantity of ashes, to make it scatter evenly. It will take about two months if watered well daily, between the sowing of the seed, and the plants attaining such a size as will fit them for transplanting.

As I have before said, our rainy season begins in December, and we therefore intend sowing our seed about the middle of October; and I think it would probably be the best time, for any plantation on the leeward side of these islands. After sowing, the beds must be watered *well every working day*, or the seed will not spring, but as a small piece of ground will raise plants enough for many acres, this will be no great expense. If the water is close at hand, two men will raise plants for 20 acres. If, when the plants are ready for transplanting, sufficient rain should have fallen to wet the ground thoroughly, they ought to be set out, in rows four feet apart, and a space of 2 1-2 feet betwixt each plant in the row. When the plants are first set out, they are very tender, and it is therefore necessary to protect them from the sun, unless rain be falling. We do so by pulling grass and making a couple of handfuls of it into a knot, which we lay over the plant. We line out our land in the morning, and make a hole with a hoe, at each place where a plant is to be set out, covering the holes with the grass, to prevent the sun's acting upon them. During the middle of the day, the men pick grass for next day's planting, and in the afternoon plant the ground, that was prepared in the morning. After the young plant has taken firm root, the grass ought to be removed from over it, and placed round the stem.

It will be necessary to keep the ground very free from weeds, which must be done with the hoe. Not to take up time with things that may be better learned from works relating to the cultivation of tobacco in the United States, I will refer to them, for all regarding suckering, &c., and will merely state that we top the plant, when it has 16 leaves, removing 2, and leaving 14 to grow, and proceed to give the plan of curing tobacco, our *present* experience has shown to be the best.

For curing tobacco, houses are required, and we have divided our land into strips of one hundred yards broad, separating each by a house, running the whole length of the field. As the land we have

planted this year, is somewhat above 300 yards in length, we have built two houses, the joint length of which is 1,832 feet. They are 6 feet high to the top of the wall plate, 7 feet broad, and thatched down to the ground, but so thinly that the sun shines through them at a great many points, though not in large patches. A house of the above dimensions, will contain the tobacco grown on ground of its own length, and 100 yards broad. When the tobacco is ripe, which is known by its acquiring a mottled appearance, it is cut down, care being taken, not to begin till the afternoon, for fear the sun should burn it. It is left, when cut, till next morning, when it is carried into the curing-house, laid on a mat side by side, three or four rows deep, and covered by another mat. It is left in this way till it has sweated profusely, but it is impossible to give the exact time it will require to do so, as it depends much on the state of the weather, and likewise on the quantity of tobacco in the heap. The best plan is to see to it frequently after 36 hours have passed, that it may not get so much heated as to spoil. It is generally two days, and sometimes more, before it ought to be removed. It is then taken, and hung by the bottom of the stem, to sticks placed from wall plate to wall plate of the curing-house. If the plants are large, there ought to be six inches betwixt each plant, and the cross stick's places eight inches apart. The plants should be left thus for six or seven days, till they are almost dry, when they are taken down for the second sweating, and treated as for the first, only that they are laid 7 or 8 rows deep and left for a longer time. There is now much less danger, of their getting overheated, than at first, but still great care must be taken, and it is best to look to them after the second day. When they begin to get rather warm and assume a brown color, they are taken out, the leaves stript clean from the stem, tied in bunches of 30 or 40, by the small ends, and again hung up to dry. It is necessary, that the tobacco get the second sweating, before it is quite dry, or it will not begin to heat, and that the leaves, be hung up to dry by the small ends, or the stems will rot. The tobacco will now take about a fortnight to dry, and it may then be packed away in mats, and sent to the tobacco house. As it will probably be so dry, as not to bear handling without

injury, it is best to expose it to the dew, for one night, before packing away. We put about one hundred pounds in a mat, and pack it as hard as possible. I believe that tobacco treated in the above manner, will be fit for the cigar maker, in one year after it is cut. In referring to the report of J. F. B. Marshal, Esq., Vice President for Kauai, for June, 1853, I find that he suggests "that means be taken by the Society, to procure for the tobacco planters, such information, from tobacco-growing countries, as to the best method of raising, and process of curing, as may be useful to them." If his advice has been acted upon, I hope we may soon hear in reply, as there can be no doubt that we have much yet to learn.

We have this year, four different kinds of tobacco in our field, and as some of them are much better than others, I will say a few words about each.

First, Native tobacco ; I have not been able to learn, when tobacco was first introduced into these islands, nor from what country the seed came ; but there are two kinds cultivated by the natives, one with a large round leaf, and the other with a smaller and more pointed one. I have not been able to discover much difference in their qualities, and I hope that the cigars we this year send to the show, will prove, that neither of them are to be despised.

Second, We have some plants from seeds introduced from Havana by His Excellency, R. C. Wyllie. Both in appearance and flavor, his tobacco bears a strong resemblance to the broad-leafed native kind, and none but one well acquainted with tobacco, could distinguish them.

Third, We have a few plants from seed sent us by our President, Hon. William L. Lee, procured by him from the Secretary of the N. Y. S. A. Society. From some cause this seed did not come up well, and we have only enough to give us seed for next planting. It has a very small, round and fine leaf, and we hope to find it a superior tobacco, but will not be able to give a decided opinion until we have some of it cured.

Fourth, From seed sent by John Montgomery, Esq. I am not aware from whence this seed was procured, but the plant is so different from any other we have seen, that we suppose it must be from

Manila. The stem does not attain the hight, that the other kinds do, but the leaves are so large, and placed so close, that it produces a far larger quantity of tobacco. The beauty and symmetry of the plant, induces me to suppose, that it has for many years received great care in its cultivation, and from the little I have seen of it I think it will prove not only a fine, but good burning tobacco. It will easily be distinguished from the native tobacco, sent to the Fair, by the great size, and more pointed character of its leaves. It is more than probable, that the greater part of our field, will next year be planted with this kind, and I shall then be enabled to supply the Society with the seed, which I am prevented doing this year, by the small supply we have for our own use.

The expense of raising 20 acres of tobacco may be estimated as follows :—

Clearing and ploughing land,	at $5. per acre,	$100 00
10 pounds of seed,	at 3. " pound,	30 00
Preparing plant-bed and raising plants,		35 00
Setting out plants		150 00
Curing-houses,		500 00
10 men for 3 months,		180 00
Mats for packing tobacco,		100 00
Tobacco-house,		80 00
Total,		$1175 00

The second year's expense will, of course be less, by the cost of the curing and tobacco-houses, or nearly one half. We have not ascertained what quantity of tobacco one acre will produce, but we think it a low estimate at 1200 lbs., which will make some 80,000 cigars.

In conclusion, I would say, that in spite of the disappointments we have met with, from want of that knowledge of the climate of the district where we are situated, and of the manner of cultivation best adapted to these islands, which is only to be got by experience, that I am more than ever convinced, that tobacco will ultimately be one of the best paying crops raised here, and that nothing but time is required to enable us to compete successfully with Manila or Havana.

Respectfully submitted,

REPORT OF THE COMMITTEE ON THE HONEY-BEE.

By W. Chamberlain.

To the President and Members of the R. H. A. Society.

Gentlemen: Few insects or animals, furnish more materials for instruction or reflection, than the honey-bee, their wonderful instincts, their labors, their social regulations, are alike deserving the study and notice of all; and as their labors contribute so much to the comfort of man and furnish a source of profit as well as luxury, they become especially a worthy object to receive a share of the attention of this Society in its desire to encourage the introduction of valuable animals, insects, &c., into these islands.

It was hoped at the last annual meeting of this Society, that we should, ere another year had passed, be in possession of this interesting insect, as we had been informed of the shipment at Boston, of two hives, on board of the Bark "Matanzas" bound for Honolulu, and with such precautions as seemed to justify the hopes that they would reach us in safety; but we have again been called to experience disappointment in our expectations,—only a small number being found alive on the arrival of the "Matanzas."

We are informed that the failure in this enterprise was not occasioned by any lack of care and attention; but by the unexpected appearance of that enemy of the insect,—the bee-moth,—within the hives a few weeks previous to the arrival of the vessel at this port, and we are encouraged to believe that, with great care in the selection of hives free from moths and their eggs, and with due regard to the season of their shipment, that they may be safely brought hither, even from New England, by the same method as that adopted in the "Matanzas." It is reported that the honey-bee has recently been introduced into California, and we may hope to import some swarms at a future day from that State with little inconvenience. At present however, we are aware of no locality nearer than the Eastern States of America, from whence they may be transported conveniently hither; though it is stated that they are raised in Australia and New Zealand, which are nearer to us in point of distance.

There are some important considerations which come up, as we anticipate the time when the honey-bee shall be introduced into these islands, and among these we would notice, the location best adapted to their thrift; the materials from whence they are to procure their honey, &c; and the care and attention to be paid to them.

The honey-bee, when it shall fortunately be brought here, will find itself in a new climate, where winter never comes to benumb their energies or to paralyze their activity; and it would seem desirable in the first experiments with these insects, that they be taken to a situation and climate as shall nearest correspond to that from whence they came. The most favorable of which we are aware, are the elevated regions of East Maui, and of Hawaii, and the island of Kauai, where bee-forage may exist. Relative to this point, I would extract from a communication received from E. Bailey, Esq., a member of your committee on the honey-bee, and whose views are ever entitled to regard for their practical character. He says:—

"The character of sweet flowers, such as would produce good honey, is not very abundant on the islands, so far as my observation extends, only one plant having a sweet flower, such as would be good bee-forage, exists in sufficient abundance to feed any considerable amount of swarms, viz: the common clover of the islands, known in Hawaii as Zizania. I would therefore recommend that on the arrival of bees in future, that they be taken without delay to some elevated quiet region where this plant is abundant and the climate for the most part like that of their own fatherland. Such places are Makawao, and Ulupalakua on Maui, and the latter has this decided advantage, that it is free from strong and continued winds, damp, rough atmosphere, and frequent drizzling rains, while the clover is in great abundance and widely disseminated. It might also be advisable to plant an extra amount of cucumbers in their neighborhood, to furnish them bread till they get initiated to the use of island plants for that purpose."

The species of clover mentioned by Mr. Bailey, is in our opinion one of the most reliable plants for the support of the honey-bee; it is easily introduced even into rocky soil, and spreads widely and rapidly. It is found in many sections of Oahu as well as Maui, and we believe on other islands.

As bees never make honey, but extract it from such flowers and other substances as yield it, there is very great difference in its quality as made in different places, owing to the nature of the flowers &c., from which it is taken. Bees always extract more or less of the peculiar matter of plants with the honey. It is said that the honey of a considerable district on the south-east shore of the Black Sea, is noted for its intoxicating or maddening qualities when new, which is supposed to be owing to a species of hypericum which abounds in that region, while the honey of Majorica and Minorica, is said to have a superior flavor which is derived from the blossoms of the orange and lemon, and it is well known in the United States, that the honey derived from white clover is far superior in quality to that which is taken from buck-wheat. The character of the materials from whence the bee may extract its honey at these islands, is therefore worthy of our attention. It is presumed that the blossom of the banana will furnish good honey, but it remains to be tried, as also many other plants and flowers peculiar to these islands. Imported varieties of flowers may be relied on as furnishing superior honey. Among them the mignonette, thyme, especially lemon-thyme, the jessamine, heliotrope, hollyhock, marigolds, lilies, the sun-flower, also sage and mustard; the flower of the bean, melon, cucumber and squash; but in our opinion these are not yet cultivated extensively enough to furnish a constant supply for numerous swarms to depend on throughout the year. When we consider the number of these insects which compose a single hive, (from 10,000 to 30,000,) it is plain that they must have an abundant supply of flowers or other material from whence to extract honey. In our opinion the sugar plantations of these islands would be a desirable locality for the bee in respect to material from which they may extract honey, as much of the matter which is thrown aside from the mills will afford a large store for their wants; though the quality of honey so derived, may not be quite as fine as that obtained from flowers. It would seem to be an important consideration that the bees have ample provision for their wants within a short distance of the hives, so that they may not be forced to stray a mile or two away, thus incurring a great liability to accidents.

Much care should be given to the situation of the hives. It is essential that they should be sheltered from the wind and rain, and also from the noon-day sun which would injure the honey and melt it, and for this purpose the bee-stand should be placed in a small open shed; a few shrubs about the stand would also be good as an additional shelter, while the whole might be shielded from the wind by a high wall or fence.

Noisy places and the neighborhoood of offensive odors should be avoided as they may cause the bees to desert the hives. The bee hives should never be placed *close* to each other, for bees are naturally very irritable and pugnacious insects, and if two colonies be kept too near each other, battles will take place, and the weaker hive be injured or destroyed. Regard should be had to the proximity of hives to ponds, as in such a case, thousands of bees will be lost by being blown into the water when returning heavily laden to the hive. Water is essential to their welfare, but it must be presented to them judiciously, or it will prove a greater evil than good.—It would be well to place near the stand, small shallow pans of water and put some pebbles into them for the bees to rest on while drinking; the water should be changed daily.

The honey-bee at these islands, will be subject to the annoyance of many enemies,—rats, mice, lizards, caterpillars, spiders, ants and poultry. It will require great watchfulness and ingenuity on the part of the bee cultivator, to protect them from their enemies.

In regard to hives and boxes for bees, there are many varieties invented by individuals who have given much attention to the insect, and some of them seem to be most admirably adapted to the convenience both of the bee and to the bee cultivator, who would take the honey without depriving the insects of life. Such hives may be imported when the bee may have been found to do well here. Glass hives are not to be recommended, as the bee loves darkness and hates light and observation. Hives or boxes which will answer for bees, may easily be constructed by ordinary mechanics, the chief essential to be kept in mind, being good material and tightness, so that there may be no harbor for moths to deposite their eggs, or for other enemies to conceal themselves.

To those who would cultivate the honey-bee, it is indispensable that they should previously become acquainted with the natural history of the insect ; otherwise they will find their object fail, without being able to assign a reason ; while by making themselves acquainted with it, they will remedy many unexpected disasters by simple expedients.

As justice on this subject cannot be done in a brief report, I would refer any who may be interested in this insect, to the following treatises, viz :—" Townly on Bees," " Smith on Bees," "Allen's Bee Cultivator," " The American Bee Keeper's Manual " and " Week's Manual on Bees."

As within the past year two gentlemen,—Henry A. Peirce, Esq., of Boston, and Capt. Stearnes of the Bark "Matanzas," have interested themselves to introduce here the honey-bee, for the benefit of our islands, at their own individual expense and with much pains, which enterprize unfortunately failed, as also a previous similar attempt by Mr. Peirce, we would recommend that this Society take measures to assure these gentlemen of our high appreciation of their interest and services in so laudable an undertaking. Relative to these efforts, I have received a very interesting letter from Charles R. Bishop, Esq., who is in possession of more information and experience on this subject, than any other member of the committee, and which I herewith append.

Respectfully submitted.

HONOLULU, May, 26th, 1854.

W. CHAMBERLAIN, *Chairman of the Committee on the Honey-Bee.*

DEAR SIR: Being one of your committee, and having had within the last year a little experience with an unfortunate colony of these interesting insects upon which you are expected to report, I will give you what information I can, relating thereto.

I believe that each year since the formation of the R. H. A. Society, except the present, there has been offered a premium for the introduction of the honey-bee into these islands. The only persons

that I know of who have really been at any expense and trouble to accomplish so desirable an object, are Henry A. Peirce, Esq., of Boston, a life-member of the Society from its foundation, and contributor to its objects in various ways, and Capt. Stearnes, of the Bark "Matanzas."

In 1851, Mr. Peirce put on board the ship "R. B. Forbes," one swarm of bees, and offered the mate a liberal reward if he would take care of and deliver any of them here safely. The hot weather in the South Atlantic melted the honey and drowned all the bees in the hive. In February, 1853, he procured another fine swarm, well stocked with honey, and was at a large expense (some $140) in having it secured on the deck of the Bark "Matanzas," in such a manner that seemed to insure its safe arrival here. The hive was placed in a strong box, leaving a space of six inches all around for air, between the hive and box, then a packing of ice two feet thick, above, below, and on each side, outside of which was a space of six inches filled with charcoal, and all enclosed in a case eight feet square, having 2 lead pipes three inches in diameter, running from the outside to the hive, to supply the bees with air. Capt. Stearnes also purchased a swarm, and placed the hive inside a box having wire-cloth nailed across openings in the sides, and hung it up under his boat, just forward of the cabin. The bark had a long passage, (150 days,) and being becalmed a number of days in the vicinity of the equator, in the Atlantic, a part of the ice melted, and during the rough weather off Cape Horn, thumped against the box so heavily as to jar many of the bees down into the water. After they doubled the Cape, Capt. S. had them taken out of the large case, and hung up under the boats with the other swarm, where they both appeared to be doing well, until they arrived within about ten days of this port, when moths made their appearance in the boxes, and the bees commenced to die rapidly,—Capt. S.'s swarm more than the other. When the bark arrived off Honolulu, (in August, 1852,) I went on board, examined Capt. S.'s hive, and found large numbers of moths, worms, larvæ, and some dead bees inside, but no live bees. The other hive was in very bad condition, containing swarms of moths, worms and larvæ among the honey comb. A few of the bees were living, and they had plenty of

honey,—some 12 to 15 lbs,—a part of which, in the chamber of the hive, was very handsome. I took the hive to my garden, where, with the kind assistance of Capt. Stearnes and others, we removed as many as possible of the moths, and cleared the hive of worms, dirt, etc , as well as we could, and afterwards removed nearly all the honey.—. There appeared to be from 40 to 60 bees living, among them the queen. The hive of bees and honey was put up and sold at auction, in order to give persons understanding the management of bees, or wishing to have them, an opportunity to purchase. I purchased them, had a new hive made, and tried to induce them to occupy it, but without success. After a few days, I thought they seemed to be less active than usual, and upon examination, found but three or four bees remaining, and a day or two after, none at all. As there were no dead bees in the hive or on the boards underneath, and no birds about to destroy them, I concluded that they had found some place more to their fancy than the hive, and that I should again see them or hear of them, but I have not, and am unable to account for their disappearance or fate.

Capt. Stearnes took excellent care of the bees, as well as of the South Down sheep brought to Mr. Thos. Cummins, and Spanish fowls to H. M. Whitney; and had he had a short passage, or even a passage of from 130 to 140 days, would have delivered both swarms in good order; which proves that they can be brought from the U. S., via Cape Horn, without any great expense or trouble, except to have them secured against wet, excessive heat and rough handling. But great care should be taken in the commencement, to select hives free from moths and their eggs.

Had the swarm mentioned arrived here in better condition, it probably would have been better to have sent it immediately to a cool locality, on Maui or Kauai, in the vicinity of sugar plantations and banana fields; but it was too far gone to admit of any delay in removing the destructive enemies of the bees. We have great varieties of moths and ants in the Islands, from which it would require constant care to protect the bees.

I have lately learned that honey bees have been recently introduced into California. By and bye, we shall probably be able to get them from there, more easily than from any other place.

The thanks of the Society are due to Capt. Stearnes; and Mr. Peirce should, in my opinion, be partly, if not entirely remunerated, for the expenses incurred in trying to supply us with so interesting and useful an addition as the honey bee.

Respectfully yours,

CHAS. R. BISHOP.

Adjourned till this evening at 7½ o'clock.

Evening Session, June 13th.

The exercises commenced with singing, by the Honolulu Amateur Musical Society. After which, the President introduced to the audience the Hon. D. L. Gregg, who had kindly consented to deliver the Annual Address before the Society. Mr. Gregg's address,—which was an eloquent production,—was listened to with admiration and much attention, by the crowded audience, and elicited, during its delivery, frequent applause, and at the close, a long and continued round from the whole assembly.

The following is the

ADDRESS

OF HON. DAVID L. GREGG.

The cultivation of the soil stands first in the list of pursuits which occupy the attention of mankind. All others sink in the scale when compared with it, for it is the foundation of them all. It is the grand source from which they derive support, and are fostered into being. It is enjoined upon man by the behest of Heaven, and though the penalty of prevarication and crime, acquires dignity from the high sanction by which it was imposed. Holy Writ informs us that "the Lord God sent him out of the paradise of pleasure, to till the earth from which he was taken." (Genesis: iii, 23.)

Agriculture may well be styled the mother of wealth, of prosperity and of civilization. Commerce is but the handmaid of agriculture; she spreads her wings but to distribute the riches which spring from the bosom of the earth; she is not the creator of wealth, but the messenger of those by whom it is called into existence. The ship that

unfurls its canvass to the breeze, and ploughs the bosom of the ocean, would rot in idleness were the hand of labor to become paralyzed, or harvest no longer bestow upon industry its accustomed reward.

The wealth which the plough turns up, and the toiling hand developes from the soil, constitutes so large a proportion of the whole in existence, that all else sinks into insignificance. The gold-fields of California, of Australia, and of all the world besides, afford but a mere item in the general account. Agriculture is the great producer, and mother earth yields from her teeming surface the material, not only to supply the wants, the comforts and the luxuries of individuals, but to enrich nations.

Material prosperity follows close in the wake of agricultural skill. The rudest people and the poorest are those who have no fixed residence,—no individual ownership in the soil, and no skill in its cultivation. Savage tribes are uniformly wanderers, knowing but little of the endearments of home, and possessing only the germs of those generous sympathies and affections which distinguish man in his highest state of improvement. In their condition seems almost to be realised the curse of Cain, condemned to perpetual flight, endless mistrust and never-ceasing warfare.

Improvements in the social state are marked by more distinct ideas of property, superior industry, and greater dependance upon the cultivation of the soil. The bow and arrow give place to the spade; the hatchet and war-club are surrendered for the hoe and the plough; the spear yields to the pruning hook; the forest disappears, and where, before, its dense shadows only fell, fertile fields exist; towns and cities rise; schools and churches spring up, and the true God is worshipped. The wanderer has at length a fixed habitation. No longer the mere serf of a despotic chief, he can look abroad upon his own possessions, call himself A MAN, and within his proper sphere, enjoy the blessings of independence.

This is civilization, and thus does civilization pay homage to agriculture, its invariable attendant, and, next to Christianity, its most effective agent. The cultivation of the soil is inseparable from an enlightened state of society. The world affords no example of permanent social or national prosperity, where labor was not respected and invested with its proper dignity.

The subject, then, which engages your attention this evening, is one of no ordinary magnitude;—certainly one far above the experience or the knowledge which I am able to bring to its discussion. Had I reflected well upon what was before me, and what ought reasonably to be looked for on such an occasion, I should doubtless have occupied the position of a listener, instead of attempting to address you, and beyond all question, you would have been gainers by such an arrangement. But in an evil hour for myself, I listened to the flattering persuasions of the distinguished gentleman who presides over your Society, and in consequence, stand here in a predicament from which I can only hope for a safe deliverance, through your kind indulgence.

With only a limited knowledge of agriculture, acquired in a climate widely different in most of its characteristics, how can it be expected that I shall be able to bring before you considerations either scientific or practical?

> "Of speaking well, these are the chiefest springs,—
> To know the nature and the use of things."

Without this intimate knowledge, so essential on such an occasion, and so desirable to every man of intelligence, the most which I can hope to accomplish, is to manifest, in some small degree, my interest in the efforts which you have made, and are still making, to develop the resources and secure the prosperity of these Islands.

In looking over the proceedings of the "Royal Hawaiian Agricultural Society," in past years, I have been much struck with the high degree of intelligence manifested in every department of its operations. Under such auspices, there surely can be no failure to accomplish the objects which it has in view. Agricultural pursuits will not languish when supported by knowledge, by enterprise, and a fixed determination to surmount every obstacle. The time will soon come, if it has not already arrived, when the fruits of your labors will be distinctly seen, in multiplied productions of the earth,—in increased wealth,—in a higher state of refinement in every grade of society.—The friends of improvement cannot be insensible to the merits of these exertions, nor can they remain indifferent to the purposes to which they are mainly directed.

So far as any actual developement of their resources is concerned, the Hawaiian Islands may be considered as yet in a state of infancy.

A large proportion of their surface is still unreclaimed from the dominion of nature,—still a barren waste, affording no support to population, and making no addition to the general resources of the country. A different state of things ought, at least, *to begin* to exist.—Rescued from heathenism, it seems reasonable to expect that the Hawaiian group will soon present to the world some of the evidences of material prosperity and progress. These always mark the advance of civilization;—they afford an unerring criterion by which we may judge of the interior condition of any people. When the plough, the anvil and the loom are at work, public and private coffers will be well filled, contentment will abound, and confidence prevail.

According to official accounts, the eight inhabited islands of the Hawaiian Archipelago contain an area of 6,090 square miles, or 3,897,600 acres. I have endeavored to form some reasonable estimate of the proportion of their soil incapable of cultivation, but it was impossible to obtain such *data* as could be considered reliable. Perhaps it may be safely assumed that it is not greater than in the West Indies and other countries of similar structure. Several intelligent gentlemen, from whom I have sought information, suppose it to be less. It would not, I am satisfied, be far wrong to assume that three-eighths of the surface is susceptible of easy cultivation.* And who can doubt that in addition to this, most of the hills and mountain slopes now so barren and forbidding, may by industry and enterprise be converted into fruitful fields?

Look abroad, and see what obstacles the patient hand of industry has overcome! The British Islands, less than twenty times the extent of this group, rescued by toil from barrenness, give support to nearly thirty millions of people, and can boast of a commerce which extends throughout the world.† The once forbidding mountains and

*This is the opinion of Judge Lee, whose views and conclusions on all subjects connected with the Islands are justly entitled to great consideration. The Island of Jamaica, which contains an area of 6,250 square miles,—only 160 more than the inhabited islands of the Hawaiian group,—has a much less proportion of soil easily capable of cultivation.

†The British Islands contain 116,700 square miles. Harte, (*Essays*, *p.* 188,) says, their "soil is not fertile enough to make men indolent, nor barren to such a degree, as to deny grateful, if not ample returns to the industrious cultivator." In 1710, the population of what now constitutes the United Kingdom, was 7,650,000; in 1750, 9,670,000; in 1800, 15,800,000; in 1850, 27,435,325. The amount of cultivated land

hills of France, Germany and Switzerland, as rough and as desolate as those which lift their heads in these Islands, are covered with productive farms and fertile vineyards, and as the traveller passes along at their base, his eye is greeted by the cheering landscape which proclaims that nature has been made subservient to civilization.* So also of New England,—the birth place of many of those whom I see around me. Her sterile rocks, her barren soil, her ungenial climate presented no obstacles to a hardy and virtuous race, but, on the contrary, were only incentives to that restless and untiring energy which no circumstance slackens, no climate repels, no adversity subdues,—which gathers tribute from all quarters of the globe, and fills her storehouses with the productions of every nation. Her whole surface is renovated;—barrenness has given place to fertility;—the rose blossoms where the briar grew;—villages and cities have sprung into existence, filled with men of thought and action; and her sons, trained in the schools which she holds up as her highest, proudest boast, go forth armed with intelligence, to compete with the world.

But it is needless to seek for illustrations of what is apparent to all, and will be universally admitted. There is hardly an object which enlightened labor will fail to accomplish; and what is there to hinder these beautiful Islands, the fairest gems of the Pacific, from blooming as a garden, and yielding abundant harvests, as the reward of their cultivation? Nature has been lavish of her bounties. She has provided a climate more genial, perhaps, than can elsewhere be found upon the surface of the globe. Here the wintry blast is never felt. Save upon the lofty summits of Mauna Loa, the snow never reflects the sunshine; the frost never glitters in the moonbeam. "Spring reigns perpetual," and spreads, through the whole year, its flowers and fruits and verdure. And yet so admirably arranged is the tem-

is 48,779,615 acres; of uncultivated land, 28,227,435 acres. The annual production has been estimated at £59,750,000. See McCulloch's Geographical Dictionary, title "British Empire."

*France has an area of 203,736 square miles. The population, which in 1801 was 27,349,000, had increased in 1821 to 30,461,875; in 1831 to 32,568,223; in 1836, to 33,540,910, and in 1846, to 35,400,486. The quantity of vineyard land is about 4,265,000 acres, or 1-26th part of the entire surface. Germany as well as France, is famous for its wines and grapes. The lands usually appropriated to vineyards in these countries are on the mountain and hill sides, where the soil is far inferior to that of the plains and valleys. McCulloch's Geog. Dic.

perature of the different islands and positions of the archipelago, that the productions of nearly all climates may be cultivated with success. The fruits and vegetables of the tropics grow almost side by side with those peculiar to colder latitudes, thus affording a variety scarcely known in other countries.

Experience has shown that wheat and most of the cereal grains, heretofore supposed to flourish only beyond the tropics, do well in the upland regions of Hawaii, Maui and Kauai.* The question which once existed, has been solved, and all doubt on the subject is dissipated. I have seen specimens of the last wheat crop, equal *in appearance* to the best qualities in New York, Michigan, Illinois and the other wheat growing States of the American Union. Flour is now imported for consumption, from the United States and Chile; but it may, I think, be anticipated that the Hawaiian Islands will soon produce their own supply; thus relieving the people, to a great extent, from the high prices at which their daily bread must now be obtained. The recent establishment of a flouring mill in this city,—the first in the Islands, —is an event of some moment, not only to the wheat grower, but to the consumer, from which both are likely to derive much advantage.† It is evident that wheat is henceforth to be included among the productions of Hawaiian soil, and it is manifestly the interest of every inhabitant to encourage its growth, at least to the extent of supplying the demand for domestic consumption.‡ So also of the other grains in use, now wholly or in part obtained from abroad,—such as oats, barley, corn and rice. There is no sound policy or good sense in relying on a foreign market, when they can be far more cheaply obtain-

*Though the upland regions, at an elevation of 1,000 to 1,500 feet above the sea, are doubtless best adapted to wheat, yet it seems to do well nearer the level of the sea. A very good specimen exhibited at the Fair, was produced at Waialua, where the elevation is less than ten feet.

†This Mill was erected in December, 1853, under the superintendence of Jotham S. Graves, millwright, and Thomas Hunter, builder and master miller. It is owned by the "Hawaiian Steam Flouring Company," the stockholders of which are George D. Gower and H. J. G. Croswell, of Lahaina; Andrew Croswell, of San Francisco, and Henry M. Whitney, Jacob Hardy, Asa G. Thurston, R. Armstrong and J. S. Van Ingen, of Honolulu. Capital stock $12,000;—cost of building and machinery $10,000. At present it has but one pair of stones, although there is machinery for three pairs. In this connection may also be mentioned the iron works and foundry of D. M. Weston, erected in December, 1853.

‡The crop on Maui, for this year, is estimated at 25,000 bushels. The average yield per acre is about 25 bushels.

ed at home; nor does it seem reasonable to be content with a mere domestic supply, when so many inducements are held out to go beyond it.

From the able reports submitted to your Society this morning, it appears that sugar and coffee may be cultivated with entire success, and the time ought not to be far distant, when the annual production of these staples shall be increased a thousand fold. There is probably no climate,—not even that of the West Indies, or the Philippine Islands, upon the whole better adapted to the sugar cane. Although no intense heat exists to bring forth the crop to early maturity, as in other sugar-producing countries, it grows up certainly, if slowly, throughout the year. No frosts or floods, as in Louisiana, occur to cut short the anticipated supply; and even the ordinary yield is supposed to be beyond the usual average elsewhere. The quality of the manufactured article is also of a high standard, and will not suffer by any comparison which can be made.

The growth of coffee, likewise, is promoted by circumstances of a most favorable character. Hawaiian coffee has already acquired a name in commerce, and by competent judges is held to rank higher in quality than that of Rio or Java. The efforts of your Society have done much to encourage enterprise in this respect; and its views, wisely promoted by the encouragement of public authority, will continue to be directed to the development of interests which must naturally constitute the most important resources of the country. The time will doubtless come, when silk and indigo will be added to the list of island staples, and contribute largely to the general wealth. It is admitted that there are no obstacles *of nature* to their production, and as soon as enterprise can find assurance of an adequate reward, from their manufacture, they will be seen in your markets, and help to build up your prosperity.

I must also be permitted to allude, in general terms, to one or two other objects of industry, which might profitably engage the attention of the agriculturist, although aware that in doing so, I run the risk of conflicting with the opinions of many respectable individuals, whose views are entitled to a careful consideration. In the report on that subject, read this morning, tobacco is said to be congenial, in a high degree, to the climate of the Islands, and its culture would undoubt-

edly afford a profitable equivalent to industry. Why then should its production not be encouraged? Why should not the agriculturist be commended for his efforts to cultivate it? Is there any sound reason for cutting short the public resources by placing it under the ban?—Does any principle of sound morality or political economy require this sacrifice?

It will be conceded that tobacco, in its various forms, is an article of extensive consumption. It is alike used as a luxury by

"The grave, the gay, the lively, the severe;"

By the moralist and the man of the world,—by the divine and by the artizan. In all classes you find it; in every circle, short of those graced by female presence, it is introduced.

It is an article entering largely into the business of the world. Its cultivation and manufacture are a source of individual and public gain, legitimate in every sense of political economy in which the subject can be viewed. The question is, whether this country shall produce its own supply, and contribute, as it may, to the general stock of commerce, or pay, as has heretofore been done, a large tribute to other nations for ministering to its wants. Shall the Hawaiian nation continue to be drained of its circulating medium, to enrich the Philippine Islands, or put forth its own energies to supply the demands of necessity,—or if you will,—luxury, at home?

The demand exists; it will continue to exist, and must be answered at home, from the productions of the soil, or "*the life of the land*" diminished to provide for it.

I speak of the subject as one of political economy alone,—as a question of necessity,—as a matter long since settled by experience; not as a question of mere theory, but of established fact. In this sense nations must deal with each other and with themselves; they must take things as they are, not as theorists would have them to be; and conform to existing public usages and customs sanctioned by the moral sense of mankind, with some degree of "generous confidence" in their propriety and justice.

Were the question merely upon the introduction of tobacco into use as an article of luxury, it might, perhaps, be discussed with effect from a different point of view; and even "*Counterblastes*," I doubt not, could be fulminated, almost, if not quite as irresistible as that of

the pedantic British monarch, who, as the witty Rochester wrote of his successor, the second Charles,

> "Never said a foolish thing,
> And never did a wise one."*

The vine is another production which might, unquestionably, be turned to profitable account. What is there to hinder your thousand hills from being converted into fruitful vineyards? The climate moderated by the trade winds blowing fresh from Oregon and California, unlike that of most other regions within the tropics, is favorable to the growth of the grape in a high degree of perfection.† Why, then, is not its culture extended? Why are your tables so rarely and so meagerly supplied with this delicious fruit, when not only abundance, but profusion might exist? Is it because the wine cup is filled from the grape? Shall the gifts of Providence be rejected, because they are sometimes perverted and abused? It was not thus that the Savior of the world judged, in providing for the marriage feast in Galilee. It is not thus that the statesman should reason, in his efforts to promote the public welfare. The abuse of Nature's bounties is a crime;—their perversion from a proper end is a crime;—but it is no

*In 1837, the total value of tobacco and cigars exported from Cuba was $1,828,444. I have not been able to refer to the statistics of subsequent years. In the same year, the exports from Manila amounted to above $2,000,000, of which cigars constituted a large item. The annual product of tobacco in Virginia is not far from 80,000,000 lbs. The amount annually inspected in Baltimore is about 30,000 hhds. It would be easy to extend these illustrations of the immense importance of tobacco as an article of commerce.

†There are many exceptions to the general rule that the grape does not flourish well in tropical regions. In Peru, which lies between 3° and 21° of south latitude, grapes of an excellent quality are cultivated without difficulty, and the wine produced from them will suffer but little by comparison with the best specimens of Sherry and Madeira. This I am able to state on the authority of H. B. M.'s Consul General, who was for many years an able and distinguished officer in the Peruvian military service. In Jamaica, and several other of the West India Islands, the vine flourishes.

A word here in regard to grape culture in the United States. In 1853, upwards of half a million gallons of wine were produced in Illinois, Indiana, Ohio and Kentucky, from about 2,600 acres of vineyard. There is no doubt that the entire success of this branch of industry in those States, will soon lead to more extended operations. If it be true that in vine-growing countries the terrible evil of drunkenness prevails less extensively than elsewhere, it is worthy of consideration whether the encouragement of vineyards would not be a judicious and effective *temperance movement*. In the extensive prairies of Illinois, the spread of fire is sometines checked by what are called *back fires*, which consume in a harmless way, the material which would otherwise contribute to a destructive conflagration. So it may be that the general use of cheap and light wines would counteract the tendency to indulge in more injurious and intoxicating beverages.

crime to employ them as their Good Giver intended, in moderation, and with a thankful spirit.

The cultivation of fruit, it is gratifying to observe, is beginning to receive its proper attention. It is only strange to me that where so many advantages exist, they have not been turned to better account. If there have been doubts as to the practicability of fruit culture, the experience of the last few years has scattered them to the winds.—Any one may be satisfied on this point by a brief visit to the establishment of the worthy and venerable Captain Adams, in Kalihi valley, where may be found, in the most flourishing condition, the grape, the fig, the mango and the bread fruit,—the orange, the date and pomegranate,—the chirimoya, the lemon, the lime and the alligator pear; and where, also, will be met the genuine old school hospitality, which always pleases and never tires. Would that its days were not so nearly numbered! It is fast yielding to the mercenary spirit of the age, and will soon be forgotten. And yet, what is more worthy of being perpetuated? The good old times of which our fathers have told us, and of which we have occasionally seen an example, were indeed the days of social enjoyment,—of refined courtesy,—of high-toned hospitality. They have given place to selfishness; they are superseded by the passion for gain,—for personal aggrandizement,—for individual prominence. The altars of Mammon are erected where once stood, as objects of universal reverence, the shrines of hospitality.

But let us return to Kalihi, and once more pay our respects to the courteous old man whom for the moment we have left. He ranks among the patriarchs of the kingdom. For nearly half a century he has been a resident. He was a cotemporary of the great Kamehameha, a monarch distinguished for his foresight,—a monarch who, under the auspices of civilization, would have ranked among the first men the world has produced. He can tell you the whole history of the rise and progress of the Hawaiian nation; of its divided dominion, —its strifes,—its wars,—its final consolidation. He saw the dawn of Christianity upon the Archipelago, and has been spared to witness its triumph. His words are full of instruction; his mind well stored with the incidents of the past; and he takes delight in telling of the marvellous things he has witnessed, and of which, in the language of the poet, he might say,

"———— quorum pars magna fui."

It is time to close the interview. We leave him with regret, but with the hope that it may be often repeated before the twilight of his mortal career has vanished.*

The success of others, also, in the culture of fruit, might be pointed out, as illustrative of what industry and perseverance can accomplish.† But it is scarcely necessary to occupy your time in such a manner;—at least it would be out of place for me to give lessons on the subject, when I have scarcely attained the elements of that familiar knowledge of it, which you all possess.

I will, however, detain you for a moment, by speaking of the peach and its successful cultivation. Though not an indigenous fruit, it is evidently at home in your soil and climate, and there is no reason why it should not be produced in abundance. Here, as elsewhere, it requires care;—it is the product of labor, and will not grow up spontaneously in the forest or neglected field. It has been said that its usual flavor and richness, in colder countries, is wanting here, but such is not my experience. It is not many days, Mr. President, since you and I were favored, through the kindness of Her Britannic Majesty's Consul General, with the taste of peaches from his own grounds, and I think you will agree with me in saying that they were equal, in most respects, to those of New Jersey,—the most famous of the American States for the richness of its fruits.

The growth of the peach tree, in some parts of the Islands, is almost a subject of wonder, and the real facts in respect to it may well

*Capt. Alexander Adams was born in 1780, in Forfarshire, Scotland, and came to the Hawaiian Islands in 1811. In 1817, he aided efficiently in expelling the Russians from Kauai, and in 1820, his influence, together with that of John Young, the father of the present Premier, was efficiently exerted in favor of allowing the American missionaries to land and take up their residence on shore. Latterly, Capt. Adams has chiefly directed his attention to agriculture and the cultivation of fruits, &c.,—having introduced from China the peach, lachee, Chinese lemon, dwarf orange, prembalo and several other fruits; from Columbia River, apples, currants, gooseberries, hops, &c.; from Central America, the mammee apple and the rose apple; from South America, the alligator pear, the plum, the pear, apple, almond and other plants; and the olive from California.

†Don Francisco de Paula Marin, who came to the Islands in 1791, and died in 1837, introduced many valuable trees and plants. For an interesting account of his operations and pursuits, see the able address of His Excellency R. C. Wyllie, delivered before the R. H. Agricultural Society, on the 12th of August, 1850, and published in Vol. 1, No. 1, of the "Transactions." The missionaries, also, have done much in the way of encouraging the cultivation of fruit and ornamental trees. The same must likewise be said of the great mass of foreign residents.

challenge incredulity. But we cannot doubt what we have seen with our own eyes, or heard from those entitled to confidence. An extraordinary instance is to be found on the plantation in possession of Mr. Preston Cumings, at Kealakeakua, on the Island of Hawaii, where a tree, *but three years from the seed*, is eight inches in diameter, and now laden with its second crop of nearly a thousand peaches.* Where can you find a rival instance? What soil affords better evidence of fertility and fitness for the cultivation of a fruit everywhere sought for, everywhere admired?

The cultivation of trees, whether for fruit or ornament, may almost be said to come within the proper range of the duties of every citizen, —at least, of every man of intelligence. There is no better evidence of refinement than a love for trees and flowers;—no better proof of goodness than an admiration for the loveliness of nature. The individual who despises trees and flowers is an alien to the best feelings of the human heart, and may justly incur distrust and suspicion.—Here is a criterion of character which never fails. The perverse heart is unmoved by the grandeur of the Creator's works,—it finds no pleasure in the warbling of the bird, the rustling of the foliage, or the murmuring of the brook. It is filled with corrupt fancies, which ever exclude the highest forms of beauty and the purest sources of delight. Trust not those who are thus perverse, for they are incapable, in any great degree, of generous or noble sentiments. It is from the ranks of such that crime finds its abettors, and infamy its victims. Innocence and purity always look with a delighted eye upon the face of nature, and revel in the magnificence of her charms.

It has been said that he who makes a tree or a blade of grass grow, where none grew before, is a public benefactor. If this be so, there is evidently a chance to do the state, or at least society, some service, in this metropolis, where vegetation is but little inclined to spring up spontaneously, and irrigation alone preserves it from destruction, when once fostered into existence. That so much, under the circumstances, has been done, is a matter of wonder, rather than that more has not been accomplished. The skill evinced in many instances, in

*Mr. C. represents the peaches from this tree to be of good size, one of which he found to be 7 1-4 inches in circumference. On Hawaii, the peach tree sometimes attains a diameter of from two to three feet.

the cultivation of trees and shrubs and flowers, bears testimony to a high degree of taste; the praise of which, undoubtedly,—as in most cases where taste and elegance are concerned,—will be conceded to the female portion of the community. A thousand blessings on the ladies! They are always foremost in every good work. It is to their foresight that we owe half our comforts. Without them, we should soon degenerate into savages. The poet indulged in none of the usual license of his art, when he said,

> "The world was sad, the garden was a wild,
> And man, the hermit, sighed, till woman smiled."

Hitherto, I have spoken of the soil and its products. Let me now refer for a moment to a kindred topic. How is it with the raising of cattle and sheep on these Islands? Look abroad upon your mountains and hills, and see the bounteous provision which nature has made! Perennial fields spread out their inviting surface, and afford a constant pasturage. No care is demanded to provide for the storms of winter; the whole year is propitious; the herdsman may fold his hands, and count the rapid increase of his flocks. Stock raising cannot be otherwise than profitable in such a country, if its immense advantages of position are wisely turned to account. What is there to prevent Hawaiian beef, confessedly equal to any, from acquiring a prominent place in commerce? My views on this point may be wrong, but I cannot avoid the conviction that your grazing lands, properly employed, will hereafter prove one of the chief elements of public and individual prosperity.

It may be considered remarkable that sheep thrive so well, and remain entirely free from the diseases which prevail in other countries. It is said on good authority, that wool, instead of deteriorating in quality, as frequently happens in warm climates, improves in fineness, even without the usual crossings of breed, and other expedients, well known among wool growers.* The rapid multiplication of flocks will be a matter of surprise to those whose experience has been confined to colder latitudes. An instance of this extraordinary productiveness was mentioned to me, a few days since, by the intelligent and enter-

*This statement was made upon the authority of John Montgomery, Esq., and is fully confirmed by the testimony of Mr. Robert Moffitt and other intelligent wool growers, with whom I have conversed on the subject.

prising gentleman* who addressed you so instructively, on a similar occasion last year, as having occurred within his own experience.—On the 7th of January, 1853, he purchased a flock of ninety-six ewes, which, at the end of twelve months, from natural increase alone, numbered three hundred and eleven! Here was an annual production of more than two hundred per cent.,—an astonishing fact in sheep raising, but not, as I am assured, without its parallel. It is represented to be no unusual thing for ewes to produce two or three lambs at once,—a single lamb being commonly the exception and not the general rule. On the other hand, also, there are exceptions, such as that which occurred last spring, in the flock of Mr. Robert Moffitt, at Kahuku, where five lambs were dropped at the same time, by one ewe,—all vigorous and healthy, and still doing well.† With such facts before you, how can you doubt that wool growing is destined to be a successful and extensive branch of industry!

But this and the other resources of the Islands can only be developed by capital and labor. The presence of the former will depend upon the security of investment, and upon fair returns. Where confidence exists that these ends can be attained, it is never found wanting. Efficient labor is within the reach of capital, and will find a proper level in the competition which it excites.

The position of the Hawaiian archipelago is such as to present advantages to the agriculturist, rarely to be found. Lying directly in the track of commerce between the American and Asiatic coasts, this group seems destined to afford refreshment and supplies to the vessels of all nations, engaged in carrying it on. A market is thus brought to your very doors. There is no need to go abroad to find purchasers for the great mass of your productions. They are sought for in your own ports, and every year is likely to increase the demand. In 1853, the total number of vessels of all classes, in your harbors, was *seven hundred and forty-three*, and in the preceding year it was about the same.

Look again at the place your Islands occupy in the Pacific. Just

*John Montgomery, Esq.

†On the 5th of November, 1853, three ewes of the same flock dropped *ten* healthy lambs;—one ewe dropping *four*, and the other two, *three* each.

within the northern tropic, between 18° 50 and 22° 20 of north latitude, and 154° 53 and 160° 15 of longitude west from Greenwich, they stand, as it were, a central point, or house of rest in the ocean, holding out invitations to two continents, and giving assurances of hospitality and comfort to both. According to a statement of Nicolay, in an address before the "British Association for the Advancement of Science," in September last, their distance is,

From San Francisco,	2,083	miles,
Vancouver's Island,	2,293	"
Central America,	4,023	"
Callao,	5,060	"
Valparaiso,	5,905	"
Japan,	3,853	"
Chusan,	5,301	"
Singapore,	5,832	"
Sydney,	3,500	"
Auckland,	3,817	"

Hereafter, when lines of steamships shall be established, as they soon will be, depots of coal will be required for their convenience, at some place as nearly equidistant as possible from their points of termination. Where can such a place be found but in this archipelago? Go elsewhere, whichever way you will, the distance is too great.—Here, then, must be the chosen spot. Thus, the very necessities of commerce will tend to build up your interests, and add to your prosperity.

But it will never do to rely upon this alone. Those who expect a continuance of benefits from others, must be liberal in return. The policy which in the end always answers best, is that which gives while it enjoys,—which courts, and does not repel,—which imposes no unwise exactions, but is content with reasonable and just advantages.

How can it be, that with all these circumstances of soil, of climate and position, so favorable, the Hawaiian Islands will not soon attain a high degree of prosperity! Is there a blight spread over them, that they cannot flourish? Nature seems to have designed them for the garden of the world. Here it is, if anywhere, in the fallen condition of man, the idea of Eden may be realized. Here it is that the grains,

the fruits, the flowers,—in short, nearly all the productions of the earth,—grow side by side with each other, and flourish as if they were alike indigenous.*

Capital, enterprise, industry, alone are wanted. All these it is the purpose of your Society to encourage, and I trust it may be your fortune to point out the way to a noble result.

I have already attempted to illustrate, by example, the effects of industry, vigor and enterprise, upon national prosperity. Permit me, once more, to direct your attention abroad; and I may, I hope, presume that you will not take it amiss if I refer to my own country, instead of others with whose history I am less familiar; conceding, as I most freely do, that other nations might present instances which would answer my purpose just as well. I wish to show how successfully the hand of labor may contend against obstacles far more serious than any that are to be encountered here. See how some of the smaller American States have grown up, and become wealthy and respectable communities, and then take courage in the hope that the Hawaiian Islands may some day be their rival!

Connecticut, containing only 4,750 square miles,—1,340 less than this group,—has a population of 370,792, or 78·06 to the square mile, with 1,752 school districts, and a school fund of $2,049,482 32. Besides, she can boast of her higher literary institutions,—of her public improvements,—of her universal and increasing prosperity; in short, of a condition almost without parallel in political history.

Delaware, with an area of 2,120 square miles,—3,970 less than the Hawaiian Islands,—has 91,532 inhabitants, or an average of 43·17 to a square mile. In 1853, her expenditures for schools amounted to

*The banana, yam, sweet potato, bread-fruit, cocoa nut, kalo, arrowroot, sugar cane, raspberry, strawberry, ohia and ohelo are indigenous and abundant. Most of the esculent fruits and vegetables,—from both the temperate and hot regions,—have been successfully introduced. Irish potatoes, of an excellent quality, are cultivated. On the Island of Maui, fields of sugar cane and wheat grow side by side, and both do well. Cotton, oats, barley, indigo, corn, tobacco, rice, &c., can all find a congenial soil.—Melons, cucumbers, oranges, guavas, pine-apples, grapes, citrons, peaches, figs, tamarinds, turnips, squashes, pumpkins, beets, carrots, onions, tomatoes, beans, peas, radishes, limes, lemons, &c., &c., might be enumerated among the varieties of fruits and vegetables brought from other countries. A citizen of the United States, coming here, will miss but few, if any of the articles of food which were his favorites at home, besides finding a great variety in addition. The flowers of all climates bloom in perfection, but those from northern regions lose somewhat of their native fragrance.

$44,209 38, and her railroads and other sources of income, exclusive of taxation, produced a revenue equal to her public expenditures.

Rhode Island, with 1,120 square miles,—but little more than one-fourth the size of the Island of Hawaii,—contains a population of 147,545;—more than double that of this Kingdom, and more than ten times as many inhabitants to the square mile.* Her schools, also, are flourishing, and she annually expends over $100,000 to support them.

New Jersey has 6,851 square miles,—only 761 more than the Hawaiian Kingdom,—with a population of 489,555, or 71·46 to the square mile. Her school districts number 1,612, and in 1851, the amount applied to their support was $119,869 49. Yet her people are without taxation; the income from her railroads and public works being sufficient to meet the entire expense of the State.

Massachusetts, with 7,250 square miles,—1,160 more than the Hawaiian group,—has a population of 994,514, or 137·17 to the square mile. In 1851, she provided $965,490 for her public schools, which numbered 3,987, and, in addition, sustained 69 incorporated academies, and 785 unincorporated institutions of a similar grade.† Her resources are immense, but they are chiefly derived from the enterprise of her people, who "compass land and sea," in pursuit of gain, or on missions of philanthropy.

These are the smallest States of the American Union. Connecticut, Delaware and Rhode Island, as I have shown, are each smaller than the Hawaiian group; Massachusetts and New Jersey are only a little larger, and the same might be said of New Hampshire and Vermont. None of them can boast of natural advantages equal to those you enjoy; none of them had, originally, so many of the elements of prosperity.

The Hawaiian Islands, in December last, contained 73,140 inhabitants, or about 12 to the square mile; exceeding in density of population, Arkansas, California, Florida, Iowa, Michigan, Missouri, Texas and Wisconsin. Of the States corresponding more nearly, in density of population, to this group, may be mentioned Alabama, Georgia, Illinois, Louisiana, Maine and Mississippi. But all these, though now

*Number of inhabitants to the square mile, 122·95.

†See American Almanac for 1853, p. 241.

sparsely inhabited, are flourishing and improving States. Their borders are open to the emigrant and the exile of every land; their march is onward,—their population rapidly on the increase; and in less than a quarter of a century, they will each number more people than many of the Kingdoms of Europe. Bound by an inseparable chain to the Union, they will share in its wonderful progress, and contribute to its glory.*

The statistics of these Islands show a rapid diminution of population. In 1778, Capt. Cook estimated the number of inhabitants as high as 400,000; in 1823, it was reckoned at 142,050; in 1832, at 130,313, and in 1836, at 108,579. In 1850, the number had fallen to 84,165, and at the close of last year, it was only 73,140!

Whence is this contrast? How comes it that in the one case there is prosperity without parallel, while in the other, where nature has conferred superior advantages, the languor and decay of death are seen? But it is useless to speculate upon the causes of such a decline in population,—such a stagnation in all the channels of prosperity. It is enough to know, and to lament that since the day when the "Resolution" and "Discovery" made their appearance in Kealakeakua Bay, the progress of the Hawaiian race has been stayed, its energies have been paralyzed, and, apparently, it is fast verging to extinction. Shall such be its fate, or do the prospects of a better destiny exist?

I have faith to believe that there is a limit to this retrogression. I think I can see the signs of a brighter era in the dim twilight of the future. As the decaying plant sometimes throws off the disease which has almost sapped its vitality, and springs up to healthful maturity, so will Hawaii burst from her bonds of lethargy, and stand before the world, clothed with prosperity and strength.

I have full faith in all this. I have full faith that a people who have cast off the yoke of Paganism, and learned to adore the God of Heaven, will not be permitted to sink back into a worse state than that from which they emerged.

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*The population of the United States, at the different periods of enumeration, was as follows:—In 1790, 3,929,872; in 1800, 5,305,952; in 1810, 7,239,814; in 1820, 9,638,131; in 1830, 12,866,920; in 1840, 17,063,353; in 1850, 23,191,074.

"There is a *Providence* which shapes our ends," and that Providence will guide them safely through the dark and trying hour. The destiny of Hawaii is a grand, a noble destiny; a destiny which unwise counsels may retard, but never change. It is written in her position; it is manifest in her resources; but more than all, in her schools, and the thirst for knowledge which distinguishes her sons.

Your Society, under the patronage of Royal authority, has assumed, and will perform an important part, in seeking to revive the slumbering energies, and give direction to the industry of the nation. It is no idle work in which you are engaged. It is a work rising above the interests of individuals, and pertaining to the highest considerations of public good. While it may, and should conduce to individual gratification and advantage, its general influences will be felt in a wider circle, and be seen beyond the generation in which you live. The lesson that industry is the mother of prosperity, when enforced by example, never fails to make a lasting impression, even upon the rudest natures. Let it continue to be taught and enforced with a patience that never tires,—a perseverance that knows no end.

Its results will not long be withheld; they are, even now, beginning to appear; and with no great stretch of fancy, you may contemplate the time when your hills and your valleys shall no longer lie in desolation;—when your Island homes will be surrounded with fertility and beauty, and the whole land send up its incense of flowers and fruits to Heaven;—when the poet's prophetic strain shall be verified, and you may say,—not in the language of prophecy, but of reality,—

> ——————"The reproach
> Of barrenness is past; the fruitful fields
> Laugh with abundance, and the land, once bare,
> Or fruitful only in its own disgrace,
> Exults to see its deadliest curse repealed."

On motion of Mr. S. N. Castle, seconded by R. W. Wood, a vote of thanks was unanimously passed to Mr. Gregg, for his eloquent address, and the Secretary was instructed to request a copy for publication in the "Transactions."

The exercises of the evening closed with a fine and well executed piece of music by the Amateur Musical Society; when, on motion of S.

Reynolds, seconded by R. C. Wyllie, a vote of thanks was unanimously passed to that Society.

Adjourned to 12 o'clock, to-morrow, to attend the Fair.

WEDNESDAY, June 14, 1854.

The Society met at 12 o'clock, and the Committees chosen proceeded to judge of the productions exhibited. The following are the Reports:

REPORT OF THE COMMITTEE ON CATTLE.

The Committee on Cattle reported as follows, and their Report was accepted:

Mr. President and Gentlemen of the R. H. Agricultural Society:

Your Committee of Judges on Cattle have awarded:

For imported, short-horned Durham Bull, $20, or Silver Cup, to Thomas Cummins, of Honolulu.

For best native Bull, "Derby," $10, or silver cup, to Thos. Cummins, of Honolulu.

For best native Cow, $10, or silver cup, to Paul Manini.

For best fat Ox, over 4 years old, $5, or medal, to J. Holmes.

For best fat Steer, under 5 years old, $5, or medal, to Paul Manini.

For best Working Oxen, $5, or medal, to J. S. Emerson.

We regret that exhibitors did not comply with the rules of the Society in entering their cattle, as by failing to do so, they put it out of our power to award the premiums which we could otherwise have done. It is to be hoped that, in future, the regulations will be understood, and that exhibitors will take the trouble to regard them.

L. L. TORBERT,
JNO. JANION,
R. MOFFITT,
J. PIIKOI.

REPORT OF THE COMMITTEE ON SHEEP, SWINE, &c.

The Committee on Sheep, Swine, &c., reported as follows, which was accepted:

To the President of the R. H. Agricultural Society:

The Committee on Sheep, Swine, Wool and Terriers, do report that they have awarded prizes to the following exhibitors:

No. 32—Best Merino Ram, R. Moffitt, $10, or cup.
38—Best native Ram, do. Morrell's Shepherd.
41—Best 3 Fleeces, do. silver medal.
44—for Terriers, Paul Manini, $10, or collar.
45—Best Boar, imported, John Meek, $5, or medal.
46—Best do native, Prince Liholiho, $5, or medal.
47—Imported Sow, John Meek, $5, or medal.
48 owner unknown.
49—Lot of Pigs, R. Moffitt, $5, or medal.

In numbers 33, 34, 35, 36, 37, 39, 40, 42 and 43, there were no competitors.

Your Committee remarked two Wethers of native breed, of superior quality, and worthy of notice, exhibited by Thomas Cummins.

Respectfully submitted for Committee.

JNO. MONTGOMERY.

REPORT OF THE COMMITTEE ON FLOWERS.

The Committee on Flowers reported as follows, which was accepted:

To the President and Members of the R. H. A. Society:

GENTLEMEN:—

Your Committee on Flowers have examined with care the various boquets and collections of Flowers, on exhibition at your Fair, and would report the following as deserving of the premiums under their several classes:

No. 130—Best collection and greatest variety of Flowers, Mrs. Hillebrand, $10, or cup.

No. 131—Second do. do., Mrs. William Ladd, medal.

No. 132—Best Floral Design, Mrs. Judd, pair of vases.

No. 133—Best Boquet, Mrs. Makee, boquet holder.

No. 134—Most beautifully arranged basket of Flowers, J. Montgomery, do. do.

No. 135—Greatest variety of Roses, Mrs. Makee, do. do.

Your Committee have found no little difficulty in selecting from so

rich and beautiful a collection of boquets and groups of flowers, those most deserving of premiums; and they cannot conclude their report without expressing their satisfaction, in view of the progress in floriculture, since the last Fair, and their admiration of the many beautiful specimens exhibited, which, in an ordinary collection would have demanded prizes. Among the new gems of the floral exhibition, we would particularly notice the splendid blue lily of Mrs. Makee.

J. H. FULLER.
G. H. LUCE.
E. HOFFMANN,
B. W. FIELD.

REPORT OF THE COMMITTEE ON GRAIN, FLOUR, &c.

The Committee on Grain, Flour, Seeds and Field Crops, reported; their report was accepted, and is as follows:

The undersigned Committee, to whom was assigned the duty of determining as to the best specimens of "Grain, Flour, Seeds and Field Crops," exhibited at the annual Show and Fair of the Royal Hawaiian Agricultural Society, held this day, have had but a very limited amount of labor to perform, owing to the want of competition in this particular department of the Exhibition. We have been informed that various farmers, upon East Maui alone, have raised, the present season, upwards of fifteen hundred acres of wheat, of a good quality, which has yielded an average of more than twenty bushels to the acre! This is above the average yield of the best wheat growing regions of the United States, and but a little below the average in the wheat districts of Great Britain. The average produce in the State of New York is but fifteen bushels, and in the celebrated wheat region of Western New York, but nineteen bushels; while in England it is but twenty-two bushels, and in Scotland only thirty. Individual instances of the produce of fifty bushels to the acre, in New York, and of sixty in Scotland, are, however, by no means rare.

With such reported success in wheat culture, upon the windward islands of this group, it is a source of much regret to the Committee, that but a single specimen of about two bushels was offered for a pre-

mium. This is marked No. 1, and was raised by Messrs. Croswell and Gower, of East Maui, and, in the opinion of the Committee, is entitled to the premium of ten dollars or a silver cup. The berry is full, of a medium size, but does not bear the clear, distinct, glossy appearance of the Valparaiso, Soule's red chaff, flint blue stem, or Crate's wheat,—or, indeed, of any of the best winter varieties, as grown in the western portions of the United States.

Its general appearance is much like the spring varieties, especially such as is known as the Mediterranean spring wheat, at present raised to a considerable extent in the middle and eastern parts of the State of New York. This variety is very good for family consumption, and the bread made from it retains a pleasant flavor; but as its flour is not as white, and will not absorb as much water, it is not sought for by bakers, and is less valuable for export.

There was no flour on exhibition, and the Committee are therefore unable to determine what grade or quality of flour can be manufactured from the wheat of these Islands, but we are of opinion that the quantity and quality would be alike satisfactory, and that wheat growing will be a most profitable pursuit, on all those portions of the Islands where it can be raised. In this respect, the wheat region does not seem to be limited to the high lands of East Maui and Hawaii, as a very creditable specimen was shown us, which was raised by Mr. Emerson, of Waialua, only a few feet above tide water.

In Corn, we award the premium for the best twenty ears, to specimen marked No. 2, and for the best bushel of Indian Corn, to specimen marked No. 1,—both raised by Mr. W. Chamberlain, of Oahu.

The corn upon the ear is a superior quality of the twelve-rowed yellow variety, and we have seldom seen, in the most favored corn countries, a better specimen of the kind.

We award the premium for the best sample of white beans, to specimen No. 4, presented by Mr. Dole; and for the greatest variety of garden seeds, to Mr. Eugene Bal, who exhibited upwards of seventy choice kinds, all apparently in good order, and raised in the garden of J. Montgomery, Esq., of this city.

Very fine tobacco, and only tolerable cigars, were exhibited by Messrs. Archer & Gruben, of Kauai; and the Committee award the

premium of ten dollars or a cup to Mr. A. Archer, for the best half acre of tobacco.

Several varieties of Beans were shown by Mr. W. Chamberlain, but as the rules of the Society confined the award of a premium to white beans, we can only refer to them for the purpose of commending them to the attention of cultivators.

Mr. Emerson, of Waialua, had on exhibition, specimens of wheat, barley and oats, in the ear, raised by him on land but slightly elevated above the level of the sea, as an evidence that grain, contrary to the generally received opinion, can be successfully grown within the tropics, and near the sea coast. We commend the enterprise and perseverance of Mr. Emerson, as an example worthy the attention and imitation of the members of the Society.

The Committee observed, with much pleasure, a dozen ears of sweet corn, raised by Capt. Makee. This is the variety known in the United States as the Tuscarora or sugar corn, and is a most delicious vegetable for the table at all seasons. Its cultivation should be encouraged, and we recommend a premium, in the present instance, of two dollars, and that, in future, a suitable premium be offered by the Society for the best twenty ears of sweet corn.

Respectfully submitted,

B. F. ANGEL,
R. W. WOOD,
R. ARMSTRONG,
T. MOSSMAN,
H. RHODES.
Committee.

REPORT OF THE COMMITTEE ON SUGAR, SYRUP, AND COFFEE.

The Committee on Sugar, Syrup and Coffee, made a Report, which was accepted.

The Committee appointed to award the premiums on sugar, syrup and coffee, beg leave to report that, having examined the several specimens submitted by the different competitors, their award is as follows:

On Sugar.—1st premium to Alexander McGregor, for 100 lbs. exhibited, being a sample of thirty-four tons, manufactured at Koloa, Kauai, within the last year, as attested by the requisite vouchers,—$20, or a silver goblet.

2nd Premium to L. L. Torbert, for 100 lbs. exhibited, being a sample of 15 tons, manufactured at Honuaula, East Maui, within the last year, as attested by the proper vouchers,—$10, or a silver cup.

3d Premium to L. L. Torbert, for the best 100 lbs. exhibited,—$5, or a medal.

On Syrup.—Premium to L. L. Torbert, for 20 gallons of syrup exhibited, being a sample of about 300 barrels, manufactured within the past year, as attested by certificate,—$10, or a cup.

On Coffee.—1st Premium to Cumings & Hall, for over 25 lbs. exhibited, being a sample of 10,000 lbs. raised by them, at Napoopoo, District of Kona, Hawaii, within the past year, as per certificate signed by "P. Cumings,"—$15, or a silver cup.

2nd Premium for over 25 lbs. exhibited, being a sample of at least 20,000 lbs. raised by natives in the District of Kona, Hawaii, and collected by P. Cumings, as certified by Aldrich & Bishop,—$5, or a silver medal.

The Committee would remark that good samples of sugar were presented from the plantations of S. Reynolds, Esq., and Messrs. Wood & Spencer, of East Maui, and also a bottle of fine syrup from the former; also a specimen of coffee from B. Pitman, Esq., of Hilo, having a good berry, but injured by not being sufficiently dried.

Respectfully submitted,

S. N. CASTLE,
W. B. RICE,
W. A. ALDRICH,
JAMES MAKEE,
R. CLOUSTON,
Committee.

P. S.—A sample of arrow-root, of very superior quality, was exhibited, manufactured by the Rev. E. Whittlesey, formerly of Hana, East Maui, and it has been suggested that the Committee should take it into account, as it was overlooked in the list.

They would therefore recommend that a premium of $5 be granted on this sample, especially as the exhibitor has authorized it to be sold for the benefit of the Society.

REPORT OF THE COMMITTEE ON HORSES.

The Committee on Horses made a Report, which was accepted, and is as follows:

To the President and Members of the R. H. Agricultural Society:

Your Committee on Horses have great pleasure in reporting the decisions arrived at, after a long and careful examination of the respective merits of those exhibited.

In the opinion of your Committee, Capt. John Meek's imported stud "Oregon" stands first on the list; but as he received a premium last year, we can therefore only give him this special notice for a certificate or diploma. It may admit of a question whether, as long as an animal is far the best of his class exhibited from year to year, he is not entitled to a reduced premium, until some other one arrives, presenting superior claims. Your Committee recommend a premium of ten dollars to be awarded for the fine mule exhibited by Mr. Thomas Cummins, although not set down in the printed list of animals to be examined and reported upon.

The omission of any premium to be awarded for two year old colts has compelled us to pass by the claim which a very handsome and promising one, belonging to Mr. Moffitt, presented to our notice.

Class 1.—Imported Horses.

Best Blood Stallion, over 4 years old. silver cup; black Stud,—His Majesty.

Do. do. Mare, do. do. do., $10 or cup,—"Cigar," P. Manini.

Do. do. Horse of all work do. do., $20 or cup,—C. Brewer, 2d.

Do. Brood Mare of all work, $20 or cup,—"Fanny," Capt. Meek.

Do. do. do. draught, $20 or cup,—Dr. Judd.

Class 2.—Native Horses.

Best Stallion over 3 years old, $10 or cup,—black stud, P. Manini.

Do. Brood Mare, with foal at foot, 3 years old, $10 or cup,—"Jenny," T. Cummins.

DRAUGHT.

Stallion over 3 years old, $10 or cup,—"Lance," Capt. Meek.

Mare with foal at foot, over 3 years old, $10 or cup,—John Rives.

COLTS.

Best one year old Stallion, medal,—P. J. Gulick.

Do. do. Mare, Youatt on the Horse,—T. Cummins.

GELDINGS.

Best Gelding, $10 or cup,—"Frank," J. Meek.

Second best do., Youatt on the Horse,—"Bravo," F. Manini.

Your Committee have been highly gratified by the promising young stock presented at the meeting,—the produce of Oregon, Admiral and others,—and are of opinion that this part of the annual Exhibition will be of increasing interest, and present still greater difficulties in arriving at fair and equitable awards.

Respectfully submitted,

HENRY ROBINSON,

Chairman of Committee.

REPORT OF COMMITTEE ON VEGETABLES AND FRUITS.

The Committee on Vegetables and Fruits made a report, which was accepted, and is as follows:

To the President of the R. H. Agricultural Society:

The undersigned, charged with the duty of awarding premiums for vegetables and fruits, in accordance with the list furnished by the Board of Managers, respectfully submit the following Report:

That there were but three competitors for the $10 or cup, to be awarded for the best and greatest variety of vegetables, and that the variety and quality exhibited by each merited praise. But to Mr. Eugene Bal, who has charge of the garden of John Montgomery, Esq., we take great pleasure in awarding the premium,—$10 or a cup. To Mr. Montgomery, as proprietor, and to Mr. Bal, as an intelligent practical laborer, Honolulu and the Agricultural Society are much indebted, for the efforts they have successfully made and are making, to introduce into cultivation so large a variety of vegetables and fruits.

The praise due to Capt. Adams has already been made known to

you in the Annual Address, and we think it is no more than just that we should add our testimony to that of Mr. Gregg in his favor.

To Naihi, a native, much commendation is due for the variety and quality of vegetables he produced. Encouraged by example and pecuniary considerations, we anticipate, from year to year, a continued improvement in the exhibitions made by native gardeners.

To (No. 1) F. A. Oudinot, we award the premium,—$5 or a medal, for the best sweet potatoes, grown from foreign seed; they appear to be of a superior quality, and impress the Committee with the opinion that the introduction of foreign seed is very desirable.

To (No. 2) A. Paki we award the premium,—$5 or a medal,—for the best ten heads of kalo. There were other samples, perhaps of a superior quality, but they could not receive our attention, as they were of too limited a number.

To the second best 10 heads of kalo, the best 12 stalks of celery, and the best 12 heads of cauliflower, we could award no premiums, as there were none on exhibition. Mr. Bal has samples of celery, but they had not so far advanced as to justify us in considering them stalks.

To Mr. E. Bal we award the premium, $3 or book, for the best 12 white turnips and the best 12 carrots.

To (No. 1) Mr. E. Bal we award the premium,—$3 or book,—for the best 6 table beets.

To (No. 3) J. Makee we award the premium,—$3 or book,—for the best 12 table radishes.

To (No. 1) Capt. A. Adams we award the premium,—$3 or book, —for the best 17 parsnips.

To (No. 1) F. A. Oudinot we award the premium,—$3 or book,— for the best 6 heads of cabbage.

To (No. 1) Eugene Bal we award the premium,—$3 or book,—for the best lettuce.

To (No. 2) Capt. A. Adams we award the premium,—$3 or book, —for the best tomatoes.

To (No. 1) Mr. Eugene Bal, for the best bunch of double parsley, the best 2 purple egg-plants, and the best 12 onions; each $3 or book.

To (No. 3) E. Bal, the premium,—$3 or book,—for the best three

squashes. The Committee were embarassed in deciding to whom to give this premium, as there were several samples of different varieties, and some very superior of the crooked-neck variety.

To (No. 1) George M. Chase, we award the premium,—$3 or book,—for the largest squash, without difficulty.

To (No. 1) L. L. Torbert we award the premium,—$3 or book,—for the best bushel of Irish potatoes, as the only ones exhibited; but they merited a prize, as of first quality, from foreign seed.

To (No. 2) Lolohi we award the premium,—$3,—for the best sweet potatoes, being the only ones exhibited; they were raised in Honolulu.

To (No. 2) J. Robinson & Co. we award the premium,—$5 or book,—for the best 12 peaches; and to (No. 1) A. Adams, the premium,—$3 or book,—for the second do. Mr. J. Makee exhibited a few quite good peaches, but their number was not sufficient to entitle him to a premium.

To (No. 2) F. A. Oudinot we award the premium,—$5 or medal, for the best dish of grapes; and to (No. 1) Wm. Ap Jones, the premium,—$3 or book,—for the second do. There were other specimens, from Nuuanu Valley and elsewhere, from young vines, that indicate that the first quality of grapes may be produced on this Island.

To (No. 1) G. P. Judd we award the premium,—$3 or book,—for the best collection of water-melons, but they were not of the best quality produced on the Islands.

To (No. 1) Alexander Adams we award the premium,—a medal,—for the best six lemons. Though these were the only lemons exhibited, they would have well deserved commendation under any circumstances.

To (No. 2) G. P. Judd, Downing's Fruit Culture, for the best six mangoes. Capt. Adams also exhibited some fine specimens of this fruit.

There were no specimens of raisins, figs, oranges, bananas, or musk-melons, which, in the opinion of the Committee, deserved praise.

Capt. Alexander Adams exhibited specimens of the alligator-pear, the mammee apple and other fruits not enumerated in the Society's list. For these, and the Society's appreciation of his efforts in the cause of fruit culture, the Committee recommend that he receive some testimonial.

Mr. Bal exhibited some very fine specimens of Turkish cucumbers, but as he has merited and received so many premiums, we only give to them the testimonial of special notice.

Capt. Makee exhibited a specimen of green sweet corn, which the Committee were happy to see, as its successful cultivation will add another most valuable vegetable to the culinary list. The specimens were of large growth and well filled.

Respectfully submitted,

ASHER B. BATES,
Chairman.

REPORT OF THE COMMITTEE ON DAIRY, POULTRY, &c.

The Committee on Dairy, Poultry, &c., made the following Report, which was accepted:

The Committee of Judges on Poultry, Dairy and Cheese, beg to report that they award the following prizes, viz:

Butter.

Prize No. 60, to lot No. 6, Mrs. Wm. Gulick, $15 or cream-pitcher.
" " 61, to lot No. 1, Mrs. Pickford, silver butter-knife.
" " 62, to lot No. 2, J. Meek, $10 or cup.
" " 63, to lot No. 3, Miss S. Conde, 6 silver tea-spoons.
" " 64, to lot No. 4, A., J. S. Emerson, silver butter-knife.

Cheese.

Prize No. 65, to lot No. 1, there being no competitor, $5 or medal.

Poultry.

We award the prize No. 52,—medal,—to Mr. Whitney; black Spanish.

We award the prize No. 55,—medal,—to Dr. Rooke; bantam.

We award the prize No. 68,—medal,—to H. G. Crabb; small Muscovy ducks.

We award the prize No. 59,—medal,—to J. Meek; geese.

All these being the only ones exhibited, so that there is no competition. There were exhibited, besides those, a pair of doves, by Mas-

ter Wm. French, and an eagle, by Prince Liholiho,—for which no prize is named in the Catalogue.

Respectfully submitted,

S. C. DAMON,
GUST. REINERS,
JOHN LADD,
A. PAKI,
T. C. B. ROOKE.

REPORT OF THE COMMITTEE ON AGRICULUTRAL IMPLEMENTS, DOMESTIC MANUFACTURES, &c.

The Committee on Agricultural Implements, Domestic Manufactures, &c., made a Report, which was amended and accepted.

Farming Implements.—Nothing of the kind was shown; they have nothing to report.

Domestic Manufactures, No. 89, one hundred cigars, island tobacco, no mention of quantity manufactured—10,000 required.

Native Kapas,—Two setts, very good,—no competition.

Churn.—Thermometer Churn; one only,—premium withheld.

Worsted Work.—No. 153, 1 piece in gilt frame, diploma; Miss H. S. Judd.

No. 154, 1 back cushion, diploma, Mrs. Swain.

" 155, 1 pair slippers, and pair of patterns, diploma.

Needlework.—No. 156, 1 collar, imitation French point lace, diploma, Mrs. Holdsworth.

No. 152, 2 children's muslin aprons, diploma, Miss E. G. Pratt.

Knit Work.—No. 157, 1 small lamp-stand, by a girl 7 years old, diploma, Lucilla Bates.

No. 157, 1 large white do., diploma, M. J. Armstrong.

Lamp Shade.—No. 159, 1 lamp shade, bound with blue, diploma, Miss Holt.

Leather.—Sides presented, not well tanned; skins, tanned well, not well curried;—premium withheld.

Shirts, linen bosom.—No. 151, 1 shirt made by Kauhi, $2; do. do. do., Kauokalewa, diploma.

A specimen of building stone, from the quarry of Waimanalo, Ho-

noululi, Ewa. Suggest a premium be offered next year. One bbl. beef, salted on Maui, in February last,—very fat and very sweet; the Committee suggest that a premium be offered the current year for the best 10 barrels.

Several specimens of castings in iron and brass; suggest that castings be enumerated for premium, hereafter.

A pocket handkerchief, very neatly flowered, and some paintings, which were done with good taste and skill, deserve notice; also, a case of daguerreotype pictures, of good character.

A beautiful lamp-stand, of worsted work, came in too late for a premium. The Committee regret that many articles for which a premium would have been awarded, if of a worthy quality, were not offered.

With due deference, we submit the above.

STEPHEN REYNOLDS.

Chairman of Com.

The reports of Judges having all been made and accepted, on motion it was voted to proceed to the election of officers for the coming year, whereupon, the following were announced as duly elected:

Hon. Wm. L. Lee, President.

B. Pitman, P. Cumings, L. L. Torbert, C. B. Andrews, R. W. Wood, H. A. Widemann,—Vice Presidents.

George Williams, Treasurer.

John Montgomery, Corresponding Secretary,

E. O. Hall, Recording Secretary.

S. N. Castle, B. F. Snow, C. R. Bishop, S. Reynolds, W. Newcomb,—Executive Committee.

Resolved, That the Board of Managers be instructed to provide, in the classes for which premiums for 1855 are to be offered, a distinct class for non-enumerated articles, with discretionary powers in the Judges, to award premiums for meritorious articles.

A series of Resolutions was proposed by E. P. Bond, and adopted.

1. *Resolved*, That the thanks of the Society be presented to the ladies and others, who have so generously contributed of flowers, paintings, needlework, fruits, &c., &c., to our annual Fair.

2. *Resolved*, That the thanks of the Society be presented to the Government, for the use of the court room and grounds.

3. *Resolved*, That the thanks of the Society be presented to Eben Wight, Esq., of Dedham, Mass., for a pair of white Dorkings, and a pair of Polish Top-Knots, sent on board ship "Waverly."

4. *Resolved*, That the Society present to Henry A. Pierce, Esq., of Boston, a silver cup, with a suitable inscription, in acknowledgment of his generous and unwearied efforts to furnish the Islands with the honey bee.

5. *Resolved*, That the thanks of the Society be presented to Hon. B. P. Johnson, of New York, for a donation of valuable agricultural books, and for his continued good offices on behalf of this Society.

6. *Resolved*, That Messrs. E. O. Hall, S. C. Damon and H. M. Whitney, be appointed as Committee on Printing for the coming year.

7. *Resolved*, That the appointment of the Standing Committees of the Society be left to the Board of Managers.

8. *Resolved*, That the thanks of this Society be presented to Mr. George Williams, Treasurer of the Society, for his judicious and efficient services in his official capacity.

9. *Resolved*, That when this Society adjourn, it adjourn to meet on the second Tuesday in June, 1855.

10. *Resolved*, That the thanks of this Society be presented to Messrs. Warren & Son, of San Francisco, for the interest they take in our Society, and for the copies of their paper which they furnish the Society; and that they be made corresponding members of this Society.

11. *Resolved*, That the thanks of this Society be tendered to Messrs. Monsarrat and Colburn, for their efficient services as auctioneers, and that the Treasurer be instructed to issue certificates of annual membership to them, without charge.

12. *Resolved*, That the Board of Managers be requested to publish in the native language, a synopsis of the proceedings of this Society, and such other agricultural matter as may seem to them of importance, at their discretion.

13. *Resolved*, That the Board of Managers be instructed to make

some provision, if they deem it practicable, for the means of conveyance for the productions of other islands, designed for exhibition at the annual Fairs.

14. *Resolved*, That the Board of Managers be instructed, in fixing rules for future Fairs, to keep the doors closed from the public until 2 o'clock, in order to allow the judges time to examine the articles presented, and to make their awards.

REPORT ON MACHINERY AND AGRICULTURAL IMPLEMENTS.

By R. Armstrong.

The Chairman of the Committee, Mr. Weston, being unable to prepare the Report, has imposed that duty upon me, although but very slightly acquainted with the subject. To him, however, and to Dr. Wood, I am chiefly indebted for the following information.

On the Lihue plantation, on Kauai, great improvements have been made in the way of machinery. The capacity of the mill for grinding the sugar cane has been more than doubled within the last year. Two steam engines have been put up; the one 24 horse power, the other 6 horse power. A new battery of boilers of great capacity has been erected; and an improved draining machine, or centrifugal separator, has been introduced. The machinery is now capable of manufacturing three tons per day.

At Koloa there has also been great improvement in the machinery, the most important of which is the water-wheel, manufactured under the direction of Mr. Weston. It is called Blake's Patent Wheel, and resembles, in its construction, the turbine or re-action wheel. It is a submerged wheel, and it has been found that its action is not impeded by any depth of superincumbent water, with a given head. The diameter of the wheel is 3 feet, depth 12 inches; number of revolutions per minute, 140. It is regulated by a balance wheel, weighing 3200 lbs. Unlike the re-action wheel, the water is applied at the bottom and escapes at the top, from the centre. When stationary, it discharges 144 inches of water; when in motion, the centrifugal action

of the wheel upon the water reduces the quantity discharged nearly one-half. The wheel, shaft and gear, weighing altogether not less than ten tons, is supported by the pressure of water underneath. By this arrangement, the friction upon the top is scarcely appreciable. It discharges about two-thirds of the quantity of water consumed by the former breast wheel, and with five feet additional head, gives double the power. The present head of water is 16 feet.

There are four mills in operation on the Islands, which were manufactured at the Globe Works, in Boston, neither of which has given satisfaction. Two on Maui, geared for cattle power, broke, the first year they were put in operation, occasioning great loss to the proprietors, notwithstanding they contained metal enough to support a steam engine of thirty horse power.

Two on Kauai, it was ascertained on their arrival here, had never been filed. They were nearly in the same state in which they had left the foundry, and without the aid of a thorough machinist, it would scarcely have been practicable to put them together. The imperfection in this machinery may be capable of explanation. It may have been owing to mistake or misunderstanding; but the facts are as above stated. For machinery, it is said, the most reliable person in Boston is Mr. Tufts, of South Boston; in New York, the Novelty Works and the West Point Foundry supply large orders for Louisiana and the West India Islands, and it is said their work has given good satisfaction.

At Hanalei, on Kauai, Mr. Charles Titcomb, Esq., is having made an entire new set of machinery for his coffee plantation, by which the process of cleaning the coffee will be greatly facilitated, and much labor saved.

At Hilo, Hawaii, Mr. Metcalf has erected a fine saw mill, which is now in full and successful operation; and Messrs. Macy & Louzada are also building a saw mill, by all of which it is hoped our market will be supplied, in some degree, by lumber from our own forests.

On Maui, Mr. Reynolds and Mr. Torbert have each made improvements in the machinery of their sugar plantations. Messrs. Croswell & Gower have introduced a reaping machine, which is now reaping

20 acres per day, much to their own advantage and that of their wheat growing neighbors.

At Honolulu, a flour mill has been erected during the past year, and has commenced grinding and is expected to grind 3,300 barrels of flour during the present year. An iron and brass foundry and machine shop is connected with the flour mill, and one steam engine answers for the whole. This establishment promises to be both profitable to the owners, and very useful to the community.

The steamer Akamai has been introduced to the coasting trade, and while running, was a great comfort as well as a great benefit to the inhabitants of the Islands. Unfortunately, she has stopped running for want of coal; but has been, in the mean time, put in thorough repair, and it is believed will soon be on her route again.

On the subject of agricultural implements, your Committee can add nothing to the report that was presented last year. Foreign implements, such as ploughs, harrows, carts, cultivators, hoes, spades, axes, yokes, &c., are gradually becoming more common on the Islands, and here and there, natives procure them to a greater extent than formerly. But they are still too expensive to become very general, and will continue to be so, until more can be done towards manufacturing them on the Islands.

Respectfully submitted, on behalf of the Committee.

REPORT ON KALO AND GARDEN VEGETABLES.

By R. Armstrong.

The fact that the Kalo constitutes the chief article of diet, in fact the staff of life, among Hawaiians, gives to this plant a high degree of interest and importance to the agriculturist. It is to the native both food and medicine. Every part of it he turns to use. With the bulb he makes his poi, without which, life would to him hardly be worth having; of the top and leaves he makes his *luau*, which, in the absence of fish or meat of any kind, is a standing relish for his poi; and of the rind he makes an astringent medicine, in common use among native doctors; and the raw kalo grated is a celebrated searcher out of all internal disorders.

Of the kalo there are many varieties, well known to the natives, and called by them the *apii*, the *apowale*, the *apuwai*, the *eula*, the *elepaio*, the *ilia*, the *owena*, the *naua*, the *uahiapele*, the *piko hoakea*, the *kaieleele*, *kaikea*, *kaikoi*, *lauloa*, *launui*, *mokahi*, *naioe*, *piialii*, *palakea*, *pala*, *weo*. Of these, the natives regard the several species called the *apii*, *apuwai*, *apowale*, *ilia*, *owena*, *uahiapele*, *lauloa*, *mokahi* and *palakea*, as best adapted for roasting or baking, and the other varieties mentioned, as best adapted for making poi. When baked, they have somewhat of an Indian turnip taste. The varieties are readily distinguished by natives by the form and size of the leaves, their degree of greenness, and by the form and size of the bulbs.

THE CULTIVATION OF THE KALO.—It will grow anywhere on the Islands, where a sufficiency of water can be had, either to irrigate it in patches or vats, or cause it to grow when planted in the open fields; and it can be planted at all seasons of the year, where there is a sufficiency of water or of moisture, and it generally requires about 12 months to bring it to maturity.

There are two methods of growing the kalo,—the one by irrigation in level vats or patches, the other on the uplands, where there is plenty of rain and a good soil.

The first thing is to prepare the ground for planting. The vats or patches are of all sizes, of many shapes,—generally rectangular, however,—and are formed by first throwing up an embankment of from one to three feet high, or by excavating, in some instances.—The bank is then beaten hard with a cocoa-nut leaf or flat stick, so as to make it impervious to the water. The bottom of the patch is then carefully dug over, to the depth of four or five inches, unless, where the ground is marshy, like the flat land of Waikiki, where the dirt is already pulverized, and only needs the grass or rushes to be cut away or dug up, and the roots mingled with the soil. When kalo patches are formed on dry land, after the bank is thrown up, the bottom leveled, and the dirt well pulverized, the water is then turned on, left to stand over night, and next day it is trampled over thoroughly by all the men, women and children who can be collected into it.—This is generally done by neighbors and friends, for the mere sport it

affords them. The object is to pulverize the dirt more effectually.—This done, it is ready for planting.

Old kalo vats, that have been kept under constant cultivation, require only to have the grass and rushes pulled and left to rot for a few days, and they are ready for replanting. If they are left to dry up, they must be entirely wrought over, which is a great labor.—When kept under constant cultivation, kalo patches need never to lie fallow; but the seed needs to be changed frequently, as we shall have occasion to remark in another place.

The preparation of the ground for the upland kalo is very different from what has just been described, and the process varies in different localities, according to the soil, the degree of moisture, cold, &c.—In some places, it is only necessary to clear the surface of the ground, dig small holes in rows about a yard apart, and set out the plants or tops, much after the Indian fashion of planting corn; and all the cultivator has to do afterwards is to keep the field clear of weeds until his crop is ripe, which will be in about twelve months.

In other localities, as for instance in Kona, Hawaii, the land is first cleared of all brush, grass or weeds, then covered over with a thick coat of grass and leaves, so as to preserve the moisture and keep down the weeds. In other cases, deep holes are dug, and partly filled with leaves, grass and kukui nuts, where they can be had, and the tops planted in these holes. Very large and fine kalo is produced in this way.

THE PLANTING.—The ground prepared, the next thing is to procure good plants; and in some places this is difficult, and occasions great delay and inconvenience. I have known fine kalo patches, in the neighborhood of Honolulu, to lie for months after being prepared, for want of suitable plants to set out. When the owner is inquired of why he don't plant, his reply is, "*no ka huli ole*,"—for want of tops.

As with all other vegetables, much of the success in cultivation depends upon the seed; so the kalo depends upon the tops set out; and it is only those who have experience who know what are good and what are not, in every given locality; for it is by no means every kalo top that it will answer to plant.

For water kalo, the tops regarded by natives as best, are called the *waihua*, the *kuipae*, the *makawai*, the *palilimau*, the *apaa*, the *pele-*

kei, the *pahu* and the *kula*. These are simply the tops of the ripe kalo, cut close down to the bulb, and the leaf part removed, leaving a stem of six or eight inches long, and they are called by natives *huli*. Some are in the habit of planting certain species of kalo around the edges of the patches, on purpose to procure good *huli*; and to raise good kalo, I am told by natives that it is necessary to keep up a rotation of plants or *huli*, and not continue to plant them in the patch which produced them.

After planting the kalo, the main thing is to keep the patches clear of weeds, and give them plenty of water, and there is no surer crop than this, and perhaps none more productive. I have had some experience in growing kalo, and I am satisfied that it is one of the most profitable crops that can be grown, in the vicinity of the large towns. I have never cultivated a patch that did not yield a hundred per cent. advance on the outlay, and some much more than this. It is always in demand, and when there is a surplus it can be easily converted into pork, and made profitable. But a great deal of the kalo cultivation carried on by natives is careless, and only half done; the patches are grown over with rushes, and not well watered; consequently the crop is small, and the article inferior. It is one of the best of vegetables, but made into poi, as the natives use it, I do not think it a good article of diet. The poi ferments, becomes sour, and those who make it their chief article of food, become corpulent, but not strong, nor capable of much endurance. In my opinion, could the natives be induced to lay aside the use of poi altogether, and boil or bake their kalo, it would be a great improvement. But this would be a hard matter.

For much of the above information I am indebted to an essay written by another member of the Committee, His Excellency G. L. Kapeau, and which I beg to present to the Society in full herewith.

Garden Vegetables.—I am indebted to the kindness of Mr. Eugene Bal, a French horticulturist, now engaged in the flourishing and beautiful garden of Mr. Montgomery, of this town, for the following list of vegetables actually cultivated, at the present time, in that place, and most of them exceedingly fine and flourishing. I know not how I can better elucidate the subject, than to present the entire list herewith, for the use of the Society. It is as follows:

Drum-head Cabbage, Chinese do.

Long Orange Carrots, Red do., Large Altringham do., White do.

Large White Turnips, Red Beets, Parsnips, Pumpkins, Rhubarb, Salsify, Vegetable Marrow.

Green Beans, Taylor's Large Windsor do., Celery.

Cucumbers,—Walker's Superb, do. Green Turkey.

Florence Lettuce, Long Leeks, Shallots.

Green Onions, (Seedlings,) Green Garlic.

Water Melons, Musk do.

Green Peas, White Radish, Red do., Horse do., Long Rare do.

Double Parsley, Simple do., Citronelle, Sweet Basil, Sage, Summer Savory, Fennel, Wild Chicory, Sorrel.

Tomatoes, Granadilles, Passion Fruit.

Sweet Potatoes, Irish do.

Arrow-root, Millet, Chile Pepper, Sweet do.

Mr. Bal has also furnished me with a list of 78 different kinds of garden seeds, collected in the same garden, and which I append to this Report. This is a most gratifying and encouraging circumstance, since one great difficulty in the way of horticulture here is the want of seeds. I am not sure that the evil is now to be remedied at once, by the gentleman referred to; but certainly there is reason to hope that it may, to some extent, at least, and he and his patron, Mr. Montgomery, deserve great praise for their success thus far in producing seeds.

Many of the vegetables mentioned in the above list, I have observed growing and flourishing in the garden of our industrious and worthy neighbor, Alexander Adams, of Kalihi. These are the only foreigners I know of, engaged to any extent in growing vegetables.—Many natives cultivate those which are best adapted to the soil of the Islands, to some extent, and with good success. They do not all flourish equally well in either garden. The tomato, lettuce, melons, beans, carrots, cucumbers, squashes, and some others, are produced without difficulty. The crops are very sure, and usually abundant. But with green peas, cabbages, beets, radishes, onions and turnips, there is more difficulty. One cause of failure is the want of good seed; another, the cut-worm, which, during some seasons, destroys

several crops, just as the plants come out of the ground. Another is the drought, unless there is water at hand for irrigation. But another obstacle still, in the way of vegetable growing, is the want of a ready market. I am told by two of the gentlemen engaged in this business, that the products of their gardens are often left to rot, for want of a market. Thus far, I believe, both the gentlemen above referred to, consider the growing of garden vegetables as unprofitable; at least, it does not pay, to form an inducement to carry it on for the sake of gain.

Respectfully submitted,

On behalf of the Committee,

R. ARMSTRONG.

Vegetable Seeds Collected by Eugene Bal, French Agricolist.

BEANS.—White, Royal Negro, Zebra, French, Red, Round, Chinese, Italian, Violet, Runners, Kindey, Small Toison, Indian.

GREEN PEAS.—Dwarf Marrowfat, Everlasting.

RADISHES.—Red, Frost-top Scarlet, White, Long Rare.

Okqu Gombo, Large, do. Small.

CABBAGE.—Drum Head, Chinese.

CARROTS.—White, Red, Large Altringham.

PEPPERS.—Chile, Sweet.

TOMATOES.—Large, Small.

PUMPKINS AND SQUASHES.—Long Pumpkin, Large Round do., Vegetable Marrow, Autumnal Squash.

LETTUCE.—White, Drum-head Black, Curled Chicory, Wild do., Green Curled Lettuce, French Romaine do.

ONIONS.—Large White, do. Red, Shallots, Garlic.

CUCUMBERS.—Long, Short Thick.

MELONS.—Red, Yellow, Musk, Green Citron, Nutmeg, Orange.

Papai, Granadilles, Passion Edulis Fruit.

Millet, Purple Egg Plant, White do.

SWEET AND POT HERBS.—Chinese Parsley, Citronelle, Perfeuil, Celery, Sweet Basil, Summer Savory, Fennel, Sorrel, Spinage, Fenochia.

Honolulu, June 7th, 1854.

REPORT ON LABOR AND POPULATION.

By Prince Liholiho.

Mr. President and Gentlemen, Members of the R. H. A. Society:

My fellow-members of the Committee on Labor and the Population of the Islands, have devolved upon me the task of collating their views on the important matter referred to them for consideration, that is to say, in as far as they have expressed any.

In justice to myself I must observe, that excepting those contained in the communications of two of my co-laborers, the suggestions offered me by the members of your committee have been almost as scarce as the labor of which they ought to have treated.

It seems to be generally allowed that throughout these Islands labor is hard to procure, and that a good days' wages is by no means sure to command a good days' work. We are not here, however, in the position of many *newly settled* countries where labor is scarce because the laborer's are few, and where every available arm is fully exercised from Monday morning till Saturday night. It is on the fact of laboring power being allowed to lie dormant ; of good muscle becoming flaccid from inaction, that we must chiefly depend for an answer to the often repeated question ; why is labor so hard to procure ? The Hawaiians are not naturally fond of labor ; the natives of hot countries seldom are. They read in their Bible that labor was imposed as a curse upon fallen Adam, and like other people, when the Scriptures coincide with their prejudices, they believe in them devoutly. Then again it is only as yesterday that *forced labor* was abolished, and the people are still taking breath, as it were, for to be coerced to do a thing is to hate it. Then again, there are those Kulianas, too, that have turned our peasantry into petty chiefs, and while supplying them with more than enough to satisfy their present needs have not generally tended to enlarge the circle of their wants. It sounds paradoxical, but all our poorer people are rich, and the spur of necessity being removed, they are unluckily insensible to that other spur which creates a desire to reach some higher platform in society would provide.

The several epidemics that have visited us since 1845, have undoubtedly had a melancholy influence upon the market for labor by

decreasing the population, for out of every hundred that have died there were always some that were willing to work.

Whilst on this subject I cannot but make confession of a feeling that all has not been done to preserve the lives of the people, and as a consequence to maintain the requisite quantum of labor, that ought to have been done and that could have been done. Because natives, or some natives, would for a time have opposed the idea of going into an Hospital when sick, no Hospital was erected till the small-pox appeared amongst us. The necessity for those houses of woe having been removed, we again stand before the World as a people without Hospitals, but by no means without disease. One would have thought that such a prejudice as I allude to on the part of the lower orders of Hawaiians should have been an extra reason for the speedy erection of Hospitals, because they were not institutions the full benefit of which could be offered at any moment to those in need of medical aid. First of all that prejudice had to be overcome. I believe that many a laboring man long since laid beneath the sod might have been alive and at work on this very day, had the institutions I allude to been called into existence even ten years ago or five. God knows whether there may not have been an impression somewhere that persons suffering from disease contracted in folly were unfit to become the recipients of aid from the public purse or a private one. Be that as it may, many a strong man to labor has been rendered weak, and in the census table many a child who should have been recorded in the births have been left unrecorded there and many children of the first, and it may be of the second and third generations, are now being visited with the sins of their fathers, because we, Mr. President and Gentlemen, unlike the good Samaritan, have neglected our duty towards our neighbor.

There was a time when it was thought that laborers from the north of Europe might be introduced here, and I do not doubt but that we have amongst us many landholders who would gladly supply every man of that class that might arrive, with ground enough for himself and family to cultivate, with other facilities for comfort and convenience, and the chance of laboring for good fair wages, whenever he had a mind to do so. Not a few ship loads of such families might do well here, but we have not got the capitalists to bring them out. If

the money was not wanting, what wonders we could do. As was said long since, "Give me a fulcrum and I will move the earth." To make the speculation safe, however, arrangements should be made to introduce such laborers in not very small numbers. In a place where labor is always looking up, as people say, laborers, being in demand, are apt to rate themselves rather highly, and in their estimate of what is due to themselves, they include elements undreamed of where they came from. Having come out as workmen, their ambition is to live without work,—by keeping stores, perhaps. The cobbler will not stick to his last. Competition alone can remedy this. I hinted just now at the inconvenience arising from the fact of the natives being *content* with their condition. The inconvenience alluded to, springs from people being *non-content* with their condition. The latter, however, is the true feeling, when properly exhibited.

I remember there was some correspondence once passed between one of our official men and H. B. M.'s Consul General, about providing a home here for the overplus population of Pitcairn's Island.—No doubt such parties would make a good and valuable nucleus of thrifty agriculturists, but their immediate effect upon the labor market would be very small.

What could be done, or might be done, is, after all, not very much to the purpose. What has been done and is being done, is more to the point. Chinese coolies have been introduced here, and more of them are on their way hither. With all their faults, and a considerable disposition to hang themselves, they have been found very useful. Suffice it to say, that some of our largest sugar and coffee plantations are now chiefly dependent upon them for the principal amount of labor done. That they might be better than they are, ought not to be used as an argument against them. That they are procurable,—that they have been procured,—that their wages are reasonable,—that you can calculate upon retaining them for a certain term,—that the climate suits them, and that they are handy in the house and in the field, are great facts. Excepting what relates to these coolies, all that bears upon the subject of importing labor, is just theory and speculation.

One member of your Committee is unfavorable to these people.—He says they are undesirable as an element of our population,—that

that they are ignorant and heathenish. But in spite of all that, they are the best immigrants we can get;—at all events, they are the best we have hitherto got, or are likely to get. It is true they lean towards the doctrines of Confucius, but by coming here, they may be on the road to conversion to the Christian faith, and our native women have got the authority of Scripture for not refusing to enter with them into the marriage state, on account of their being unbelievers. Be that as it may, people, while cultivating the graces that fit them for Heaven, should not overlook the means necessary to make the earth give forth its increase, or the saying may apply to them, "These things ye should have done, and not have left the other undone."

Whilst the subject of population occupies us, Mr. President, we must confine our attention to figures. Sentiment is out of the question. The decrease in the population which the last few years have brought about, instead of filling us with regret, ought to stimulate us to exertion. There is a void,—there is a decrease of so many men, women and children. Shall we, therefore, like Turks or fatalists, crouch in the dust, and with our hands crossed upon our hearts, rend the air with a supine cry of Inshallah! Mushallah! Ought we not rather to look the difficulty in the face, and cast about for the means of *filling up* this aching void?

If our voice have anything potential in it, let us raise it in favor of the introduction of labor from abroad. Nor ought we to sympathise with those who would rather have *no* labor at all than labor of any but the highest quality. Surely it is good policy, in every case, to do the best we can, under the circumstances in which we find ourselves. Optimists are never practical men. Of this be sure, that from whatever quarter the labor may arrive, we shall see more or less marriages result between the new comers and the daughters of the soil. And man, the highest of all animals, being nevertheless subject to certain laws, in common with pigs, monkies and what not, the result of the intermixture of two races, or of long separate families of the same race, cannot but increase the ratio of fecundity.—Isolated as these Islands were from the rest of the world, till *we had the honor of eating Captain Cook*, it is not difficult to account for the gradual decrease in the number of births, as compared to the number of the adult population. Whether there has been, more latterly, or

is now any provision in our statute book that has put a more artificial check upon child-birth, is a serious question. I will make this assertion,—that in the manners of the people, in connection with a matter which some persons would hardly imagine to bear upon the case, is to be found one cause of the scarcity of births. The inordinate love of *horse-riding* is opposed to the prolificness of our working classes; were there fewer horses, there would be more children.

In conclusion, I will merely add, that whatever machinery can do to save manual labor, we ought, under existing circumstances, to avail ourselves of most greedily; and for my part, Mr. President, I would as soon think of putting an *ad valorem* duty on the hands of every man who arrived here, as upon machinery, of whatever shape or for whatever purpose, that was destined to *do the work* of a man's hands.

Respectfully submitted.

REPORT OF THE COMMITTEE ON HORSES.

In making up a Report on *Horses*, the first thing to which we wish particularly to call attention, is the lamentable increase of the miserable creatures to be seen every day in the streets of Honolulu, and in all the horse-breeding districts on the Islands Horses are evidently fast becoming a curse and a nuisance to the country and to most of their owners, especially to the lower classes of natives, who, considering themselves rich, or as they term it, "*waiwai*," as soon as they become horse owners, will neither labor for themselves or for any one else; and looking to their horses for their own support, neglect their lands, and let them go to grass, in order to furnish feed for a set of brutes that ought to be banished the kingdom.

Many of the natives are partial to horse flesh as food, and indeed prefer it to beef; a preference which this Committee suggest should be encouraged, as offering the best mode of disposing of the majority of native owned horses, which will otherwise, in a short time, become so numerous as to eat up all the food which ought to support better animals.

About one-half of the horses on the Island are never used for any purpose but multiplication,—are never bitted or backed,—are born,

live and die without being of any advantage to any one, or having served any purpose, useful or ornamental, but the impoverishment of the land, and the propagation of the nuisance.

We want fewer horses and more good ones, and these we ought and are able to breed from imported stock, where proper care and attention is bestowed by men who understand it; as the specimens to be exhibited to-morrow will prove, though we have not yet got exactly the sort of horse required here, which we suppose to be a tough, stout made, hardy horse, with good feet and legs, and not over 14½ hands high, such as the Canadian horse has the reputation of being, and we do not doubt but stallions of that breed would get, out of some of our native mares, horses such as would answer all the purposes for which they are used here,—that is, for agricultural purposes, draying, carriage, saddle and cattle-driving, (or, as they are called, bullock-horses.) But even with the stock we have, we are sorry to say that, (with some few exceptions,) inattention, carelessness and a desire for quantity rather than quality, characterizes the horse-breeders of *Hawaii nei*, foreign as well as native.

Natives break their horses from the ages of 8 months to 2 years, (the majority between 15 and 18 months,) and they are consequently broken down and utterly worthless, except as "wittals," when they should be in their prime and best fitted for work; and the degeneration is so great, that amongst thousands, *good horses* are rare. More attention should be bestowed on the breeding and raising of good mules, which are as useful, much more hardy, do not require much more than half to keep them, and will perform as much labor as horses, and in some cases more,—as where there is much heat and strong roads,—their feet being very hard and sound. Their average working years are twice those of a horse, and if broken in young and kindly treated, they may be used for all the purposes for which horses are available, as when so broken, they command as good prices as native horses, and will, we think, in a few years bring even better.—We understand that several parties intend turning their attention to the breeding and rearing of good mules, an undertaking to which we wish all good success.

To speak of pounds may not come within the province of a "Com-

mittee on Horses," but we cannot refrain from expressing publicly our opinion, that good, well conducted, that is, properly attended pounds, are much wanted in these Islands; more especially would we suggest the erection of a proper one in the vicinity of Honolulu, to which estrays should be carried, and where they would be much more likely to be found by their owners, than in pounds 40 or 50 miles away from Honolulu.

We cannot close this Report without reiterating the remarks upon stallions made by former Committees, and again calling attention to the necessity, becoming every day more urgent, for some law regulating the number of entire horses.

The Islands should be divided into districts, to which, according to their size and the number of mares, a certain number of stallions should be allowed, and *all others* should be cut by persons competent and properly authorised so to do; or stud masters should be appointed to each district, with full power to castrate *all horses*, no matter by whom owned, that they did not deem desirable foal getters.

Few but those who have had the experience, can know the intense annoyance of the man, who owning good mares, and anxious to raise good horses from the best obtainable stock, finds a worthless native stallion running with his flock, and perhaps his best mare with foal by some beast that should never have been allowed the ability to do mischief.

JOHN MEEK,
H. S. HOWLAND,
JAMES I. DOWSETT,
FRANK P. MANINI,
THOMAS CUMMINS.

Honolulu, June 13th, 1854.

REPORT OF THE COMMITTEE ON NEAT CATTLE.

By Charles Gordon Hopkins.

Mr. President and Gentlemen:

Your Committee on Neat Cattle beg to report that, with the exception of the introduction here from California, by two different oppor-

tunities of two young bulls of the Durham breed on the side of the sire or dam, nothing very new has transpired to alter the condition of our herds. The animals in question were imported by Mr. T. Cummins, and have been for some months past running with his herd in Waimanalo. The benefit to be derived from this, indeed from almost any cross between our native cows and foreign bulls, is too evident to need comment at our hands. Your committee report with great pleasure that several other importations, including males and females, of the breeds now most valued, may be expected during the current year, so that although they, (meaning your committee,) have but little to dilate upon, their successors will in all probability, have a large field for remark opened to them. To those who value cattle for their quality as well as quantity, and who remember the difference between the beef of fine cattle and that of coarse, the intermixture of the breeds and improvement of stock is very encouraging, and housekeepers will not only be able to put beef upon their tables, but beef worth eating.

Although, as has been said, the new facts to be reported this year, are few, yet the old influences against the better management and improvement of cattle, are still hard at work. The horses not fit to ride and apparently never intended to be ridden, are gaining upon us steadily. The great body of them are positively as uncalled for and useless as a great stove would be in the midst of this perspiring audience. They are ploddingly bent upon eating up good pasturage, filling in water-holes by kneading up the mud that is in and about them, and spreading wherever they go the most obnoxious weeds. All these benefits be it remembered, their owners confer on us free of any outlay on their parts, for the animals, which for the sake of being understood, we must call horses, although it is almost a desecration of the word, eat other people's grass, and in nine cases out of ten, no tax is paid on them. In the matter of paying taxes on their horses, the natives have ingeniously introduced a sort of representative system, and one animal stands for a crowd. The more hopelessly useless they get, too, the more pertinaciously do their possessors hold on to them, and the more piteously do they send in petition after petition to have them regarded by the law with special favor above cattle

and sheep, or anything else from which individuals and the community can derive any profit. There are constantly more or less cattle being killed on the sly, and the horses that have been backed afford the rascals, who rob us, with the most essential means necessary to effect their purpose. Then again the owners seem to regard these animals as being ever worthy of protection, and a fostering care in proportion to their incapacity of doing any good for anybody, as a mother generally loves her crippled child the best. A swelled knee, or a sore back in a horse, and a decided case of mange, or something worse in a dog, are all that are necessary to make the afflicted creature dearer in their eyes than a son and more interesting than a daughter. Having mentioned dogs, we will justify their introduction into a report on cattle, by merely mentioning one of their many engaging qualities, that of watching a cow in parturition and putting her calf out of life before it is well into it.

Respectfully submitted.

HONOLULU, June 13th, 1854.

Dr. WM. HILLEBRAND,

SIR: A sudden and unexpected lameness which confines me to my room for the present, will prevent me from making some further investigations in regard to the state of Floriculture among us, which I had intended to complete to-day, and will also prevent me from being present at the meetings of the Society this year.

You would oblige me much, if, in these circumstances, you would act as chairman of the committee on Floriculture.

I had intended to present a report upon the state of Floriculture at the islands, the means within our reach for excelling in this department, the difficulties to be overcome, and the importance of more attention being paid to this subject, and I much regret that I am providentially prevented from so doing. But, upon some of these points, the paper which you left at my disposal, is so full, that were I able to prepare a separate report, I should have little more to do than to transcribe the clear and concise statements of your letter, and I feel

assured that if you can find time to put this paper into the form of a report, it will be more acceptable than anything your chairman could prepare.

Your paper mentions a catalogue of plants to be appended to the report, which I do not find connected with the paper which you sent. Probably you have laid it aside.

A catalogue of plants raised in the gardens of the islands, I shall endeavor to have completed before the anniversary of our Floricultural Society, unless it is done by some member of the Agricultural Society, previously to that time. To this end I should be glad to receive a catalogue of the plants which you have had under successful cultivation, with the botanical and common names as far as practicable.

Hoping that you will be willing to discharge the duties of the chairman of the committee on Floriculture, that thus the society may not fail of having a report upon this, one of the most interesting and important subjects upon its list,

I remain yours truly,

E. G. BECKWITH.

P. S.—Please inform me, by the bearer, or by a note, whether you can oblige me in this matter.

E. G. B.

REPORT OF THE STANDING COMMITTEE ON FLORICULTURE.

By Wm. Hillebrand.

Mr. Chairman :

As member of the committee on floriculture I take the liberty to communicate to you a few remarks which may perhaps be useful to you in making your report.

The subject of floriculture has received, during the past year in Honolulu, more attention and made greater progress, than perhaps any other branch of our Society can boast of. Not only has the cultivation of flowers attracted new devotees amongst our ladies, several of whom have taken it up in full earnest, and proved their zeal and skill by the most encouraging success ; but the taste for them has

even spread now amongst the natives, as is evidenced by the many small flower patches which have sprung up lately around their habitations. Numerous have been the importations of new flower seeds by different members, and it would not by any means be an over-estimate to say that more than a hundred new species of plants and ornamental trees or shrubs, have been added to our garden-flora. Of by far the greater proportion, seed can be raised for propagation, if proper attention be bestowed upon it.

Should such a zeal for this charming branch of horticulture increase in proportion, for some years to come, we may hope, that our little town and country residences, ere long will assume such an aspect, as a refined society ought to impress upon them in so favored a climate as ours. I will not enlarge here, Mr. Chairman, upon the benign influence of flowers and fresh vegetation, or the charm they spread insensibly upon our every day life, on the elevating and refining stimulus they afford to our mind,—such reflections I leave to the sentimental, to the poetical or philosophical turns of your and your hearers' own minds. Here they might be an abuse of your patience.

I merely beg to draw your attention to a few practical points, which in my opinion, are deserving of notice. In the first place it seems to me, that our gardens would improve greatly and become more interesting by the introduction of the more showy of our indigenous plants, especially shrubs. Our islands produce quite a number of plants, particularly of the families of the Lobiliacæ, Cyrtardræ, Rubiavæ, Myrtacæ, and others, which would prove an ornament to any garden or park, if not for splendor of flowers, certainly on account of the rich and fresh green, and glossy appearance of their handsome foliage. Most of them grow in the recesses of deep valleys, or on the slopes of the mountains, and are unknown to the majority of the foreign residents. Our Edward Sia ought to stand in every yard. We have a native palm-tree which was named by Gaudichaud, after our worthy fellow-citizen, Dr. Rooke,—Rookea,—which certainly not one in six of our members, has ever seen. Why not transfer such an interesting tree in places, where we and our visitors can enjoy its sight daily? On the sides of the high mountains of Hawaii and Maui,

grow two plants which would excite the admiration of spectators in any botanical garden,—I mean, the two species of Argyrophyton, commonly called sword-plant, one, named after Douglas, with white hairy leaves, the other, not yet described, is green. Young plants of them, taken up in pots early in the season might easily be transferred in our midst, for until now, the circumstance of the seeds being generally destroyed by insects, has prevented their propagation by them. To these two I would fain add the extremely neat and handsome, Pelargosium Dougl. known as silver-plant. On a recent excursion to East Maui, I found a probably new species of Hibiscus, with large yellow flowers, highly ornamental, of which I procured seed. Mr. Remy, who has, within the two past years explored our island group more thoroughly, than ever has been done before him, has named me a good many others, several unknown until now, which well deserve to be admitted into our gardens. The objection that mountain-plants will not grow in plains, does not hold out, until proved in special cases, by experiment, for plants are great acclimatisers. We see more than one instance on our islands of the same species of plants, rising from the sea-shore to an elevation of 6000 and 8000 feet, showing itself generally more developed and vigorous in lower situations.

The other point, which I am desirous to draw the attention of our florists on, concerns the selection of new importations. As a matter of course, plants growing naturally in climates similar to ours, will be most likely to thrive well amongst us. Most of the tropical plants will do well here. Now it is just amongst them that the most showy and splendid productions of the vegetable kingdom are to be found. Every traveler in the forests of Central and South America, or the West Indies, is struck with the beauty and variety of the vegetable life. It is just with these countries, that, next to California, we have the greatest intercourse. Most of them that pass from here to the U. States or Europe, or vice versa, traverse those blessed regions. An occasional look-out for seeds, or fruits of trees and shrubs by the wayside, a little attention to the flower-gardens of the inhabitants and the fruit markets of the towns, might procure us invaluable accessions to our flowers and vegetables, fruit and shade trees. Next come China and the Philippine islands. Correspondents to those pla-

ces, ought not to forget our gardens. It is remarkable that we have not a single species of Orohideous plants amongst us, except perhaps the vanilla, which principally form the brilliant tapestry-work of tropical forests. Of the magnificent family of Bigrosiacæ, there are only domiciliated here the Tecoma Jasmiroides and the Catalpa Syringæfol, of which latter I received lately two specimens. The extensive and, as regards dashing colors, in many of its genera, unparalleled family of the Legaminosæ, so far as tropical shrubs and trees are concerned, has only three worthy representatives in a Faisidiana, a Cæsalpiia, and a Bauhinia. I could add numerous other examples.

Here I deem it just to acknowledge the liberal and most valuable contributions, brought here by the officers of the U. S. sloop-of-war Portsmouth, from different ports of the coast of South America. May the good example of the Purser, H. Bridge and Dr. Brinckerhoff find many imitators.

In conclusion I append a catalogue of plants,* which I have, during the last year, successfully raised in my little garden, comprising about 160 species. It would be instructive and useful to make up a complete catalogue of all the plants which are cultivated in the gardens of our islands, as it might serve as a directory for friends abroad, from whom we receive our new supplies, and also for mutual exchange between our amateurs.

Very respectfully,

Your obedient servant, &c.

To G. E. Beckwith, Esq.

REPORT OF STANDING COMMITTEE ON WHEAT OATS, &c., &c.

By J. T. Gower.

To Hon. Wm. L. Lee, *President of the R. H. Agricultural Society.*

It can be emphatically said, "that a very decided advance has been made the present year over any former one, in growing wheat." If the same ratio of increase holds good another season, not less than 7,000 or 8,000 acres will be grown on East Maui alone.

* The catalogue here alluded to has not been furnished. Probably an unintentional omission.

There was sown this season about 1,150 acres, 250 of which was destroyed by the Pelua, having been sown too late in the season. The remainder, however, will yield most bountifully, judging from what little has been threshed.

There are about thirty persons engaged in the present crop, seven of whom are Hawaiians, who have about 100 acres. One of these, Kekaha, deserves particular notice, being a decidedly enterprising man, who would compare favorably with the majority of foreigners in this respect. Last year he raised the largest crop from the amount of seed sown, of any one in the region ; his crops amounting to 186 bushels from six bushels sowing, being 31 bushels to one bushel sowing. His enterprising spirit bids fair to be perpetuated in his son, a lad of fifteen, perhaps, whom I found ploughing with 2 yokes of oxen without a driver, making good work. It has been more usual to see two drivers to as many yokes of oxen, doing a poor business at that. The crop of Kekaha, this year, will amount to not less than $2,000, and his outlay in cash will not amount to more than $100, aside from threshing.

Rev. J. S. Green, the pioneer in wheat-growing on Maui, still holds on to the business, having more than doubled his last year's crop.

John Smith, who last year had about 13 acres, has, in company with another man, five times that amount of wheat that must yield, from appearances, more than 30 bushels per acre.

A. H. Spencer, and J. Crowningburg, put in some 45 or 50 acres, but it being late when sown, the Pelua took about three-fourths of it.

Messrs. Miner and Boardman have growing, from 30 to 40 acres of fine wheat, last year they had 2½ acres.

John Pierson, late from California, a native of Vermont, but for several years a wheat-grower in Illinois, has 42 acres of as large growth of straw, and will doubtless yield as well as any in Makawao.

There are several others who have quite large fields. N. F. Sayer sowed 24 acres ; about half taken by the Pelua.

R. P. Bracy, put in 28 acres ; saved 20 acres from the Pelua, of splendid wheat. Messrs. Stone and Needham had 28 acres ; Pelua took some two or three acres.

Thomas B. Cumings about 25 acres ; one-half very good, the rest

lighter, having been sown too thick, and will yield not over 25 bushels per acre. Messrs. John Miller and John Clark have about 20 acres.

Others have smaller fields, of from five to ten acres each.

Mr. H. J. G. Crosswell has taken the lead again this year as it regards the quantity sown, having, in connexion with G. D. Gower, of Lahaina, put in about 600 acres, 200 of which was cultivated for His Excellency, E. H. Allen, on his land at Makawao, a part of which was occupied by Croswell's wheat last year, but is growing better wheat than it did then. The growth is fine and the yield will be large, notwithstanding the land had been cropped for some eight or ten years with sugar-cane, before being sown to wheat.

Owing to delay in threshing the last year's crop, and in some caces, to tardiness in preparing the ground, a large part of the crop has been sown late in the season, viz : in March and April. The Pelua being very abundant and ravenous, and coming while the wheat was young and tender, they cut it down in double quick time. About 250 acres was destroyed; still as the yield will exceed the usual estimate, by some 5 or 10 bushels per acre, the aggregate amount of the crop will be as great as was anticipated before the Pelua made its appearance.

It is probable that every individual engaged in wheat raising this year, will increase his crop next season, and will have it in the ground in season, while a great many new parties will commence the business. Preparations are making for a large crop. This year's experience teaches that it will not do to trust to sowing so late in the season as March, though last year's seed sown as late as April, did well. Perhaps late sown wheat is more profitable than early sown, provided it escapes the Pelua, there being less straw to handle and thresh, requires two or three months less time to look after it, and is less exhausting to the soil.

The amount of the present crop will be from 20,000 to 25,000 bushels, judging from that already threshed. It is found by experiment, that 1¼ or 1½ bushels per acre is a large supply of seed, when sown as early as December, or January. A lot was sown in December by T. B. Cummings, at the rate of about 2 bushels of seed per acre. His

land was rich and the growth of straw large, very thick and even, but the heads were shorter, not so well filled, nor were the kernels so large and plump by one-half, as that in the immediate vicinity, where but three-fourths of the quantity of seed was used. It is found that, the earlier in the season, the richer the soil, the less seed is required. The facilities for harvesting the crop are ample though many fears have been entertained that such would not be the case.

A reaper is in operation which, with four horses, will cut from 15 to 20 acres per day, requiring two men to tend it, and about 15 natives to rake up and bind the grain. This reaper and the thresher now in use, were imported by Mr. Croswell last year. It more than meets the expectations of the parties interested in it. Another reaper, two horse power, and thresher are on the way in the "Washington Allston," imported by Mr. Croswell and George D. Gower. They have just imported a fine 8 horse power from San Francisco, with which they are now driving the thresher in use, and to which also they will attach the thresher now on the way. These threshers clean the grain fit for bagging, if attended with any care. There will be in use during the season, three threshers driven by a power equal to 16 horse power, capable of turning out from 300 to 400 bushels per day.

Your committee is of the opinion that much of the land hitherto sown to wheat, has not been suitably prepared, the ploughing having been too shoal. This will be remedied, doubtless, as wheat-growing becomes a settled business, and the wheat-growers begin to take agricultural papers.

The weather is such on East Maui, that the whole summer and autumn may be employed to advantage in preparing the soil for the succeeding crop. There is no country with which your committee is acquainted, where so much of the year can be advantageously employed in a preparation of the soil, putting in and harvesting the crop, as Hawaii nei, consequently there is none where one man can attend to so much, by one-half, as here. It is believed that when wheat-raising becomes a steady business, and there is a full supply of labor-saving machinery for its culture and harvest, that Hawaii can compete successfully with any country on the globe in growing wheat! Judg-

ing from the past, from six to ten crops can be raised on the same soil in succession, by sub-soiling, without dressing.

Neither the Hessian Fly nor Weevil in the head, neither rust nor smut has thus far made its appearance here. Notwithstanding the strong winds and heavy rains in the winter, the wheat never lodges here, unless it grows in the shade, or the land is over-rich.

Your committee believe that the average yield per acre here, exceeds that of the state of New-York by from 25 to 50 per cent. if sown early, either in December or January. First-rate wheat has been growing at an elevation of from 1000 to 3000 feet above the level of the sea. It is estimated that in Makawao, Kula, Haliimaile and Hamakuapoko not less than 60 square miles, say 40,000 acres, are adapted to the growth of wheat, to say nothing of from 10,000 to 20,000 acres in Hamakualoa, which has not yet been proved; but which your committee sees no reason to suppose will not grow good wheat.

Your committee will here notice some of the difficulties attending the cultivation of wheat as well as other crops, but which, with a little energy and perseverance, will be easily overcome.

First,—*The Pelua*, which is often troublesome to late sown wheat, but very seldom attacks early sown. If they should take the early sown there is ample time to sow again after the Pelua has left, which they usually do in a month or so from the time they commence their depredations. Early sowing, in nine cases out of ten, will run clear of these marauders.

Secondly,—*The herds of Cattle* and horses which are allowed by their owners to run at large, annoying their neighbors by day and by night, almost as much as the Pelua. Decided and united action on the part of cultivators will put a stop to this trouble, though the grazier almost claims the right of his herds to run all over creation by possession.

Lastly, but not least,—*The Weevil*, that takes the grain after it is threshed, and often gets into the stack if it is allowed to heat in the least. Many have apprehended serious trouble in preventing the depredations of this insect. Your committee believe these apprehensions owing in a great measure to an imperfect acquaintance with the origin and habits of the insect. Your committee are in doubt at

what time or stage in the growth of the wheat, the egg of the weevil is deposited within the kernel, but this much has been observed; the weevil in all its stages, from the worm of the least possible size, perceptible to the naked eye, to the full-grown insect ready for flight, have been found within the kernel, when without the aid of a microscope, not an imperfection could be discovered about it.

If, as would seem to be the case, the egg, by some means best known to the weevil, is introduced within the kernel, then kiln-drying would destroy the egg, as well as tend to prevent the heating of the wheat. If it originates without the kernel, then perhaps lime or some other substance may be applied as a preventive. Your committee would suggest that premiums be offered for the most economical, convenient and effectual preventive to the ravages of the weevil, the preventive to be applicable to other things as well as grain.

I am but little acquainted with what is doing in wheat-growing on other islands than Maui. I have learned that Rev. C. B. Andrews, of Molokai, obtained some wheat for seed; whether he sowed it, and if so, with what result, I am not aware.

Mr. Low, of Hawaii, also obtained some seed, but I have not learned what it has done. Rev. Mr. Emerson, of Waialua, no doubt has good wheat this season as he had some at the Fair last year. He being a member of the committee and no doubt will be present at the meeting of the society, he can report in reference to wheat on Oahu.

The specimens of Australian and Oregon wheat obtained by myself in California for Mr. Croswell, and sowed by him last year, yielded well, bid fair to be an improvement upon the seed hitherto sown on Maui. It was sown late in the season, and the Pelua took the whole.

The samples of wheat, barley and oats, received by the society from the United States, and sent by yourself to East Maui, proved to be good for nothing, not a seed vegetating.

I received from Mr. Chamberlain a package of Washington wheat, another of the same from yourself, both of which I planted with great care, and it came up beautifully, and looked finely, but being called away for three or four weeks on business, when I returned, the wheat had vanished; the Pelua having taken it almost root and branch.

Mr. Green had a sample of the same which escaped the Pelua, and is looking well though not yet headed.

His Excellency, E. H. Allen, sent to Mr. Croswell, 200 pounds of the best looking wheat we have seen on Maui, which was sown and came up well, but the Pelua looked at it, and it was gone.

It is much to be regretted that chess should have been introduced as it was, two or three years since in some oats from Australia, and sown by Mr. Green. Previously to that, not a particle of foul seed could be found in the wheat raised here. Great care should be taken in the introduction of new seeds, that they contain no foul seeds, as oftentimes the introduction of some troublesome weed, more than counter-balances the good derived from the change of seed.

Owing to the delay in threshing last year's crop, nearly one-third of it was lost by the stacks becoming wet from the heavy winter rains. The threshing was put off till late from fear of the weevil, but this did not prevent its depredations, nor will wheat escape the weevil in the stacks unless kept dry and cool. This season the threshing commenced in May, immediately after the first cutting, and will be continued till the crop is all out.

Other grains are but little cultivated as yet on Maui ; there are two small lots of barley on Mr. Reynold's place at Haliimaile, which looks finely. Oats would have been cultivated quite largely but for the difficulty of obtaining seed that would vegetate. Usually not more than one-tenth of the oats offered for sale at Honolulu, will grow. Measures will be taken this year to obtain barley, oats, rye and buckwheat, if possible.

The Fair is about two weeks too early in the season for the wheat-crop. If it could be holden the first of July, wheat-growers could compete for the premium which is now of scarcely any avail, as owing to the irregularity of communication, it is difficult to get the specimens down in season. If it would not incommode other interests, it would greatly accommodate the wheat-growers, to have the Fair the last of June, or first of July.

REPORT ON SHEEP.

By Robert Moffitt.

To the Members of the R. H. Agricultural Society.

Mr. President and Gentlemen:—In laying before you my report as chairman of the committee on sheep, I must begin by stating that I have not any personal knowledge of either the capabilities of the other islands for sheep-farming, nor of the methods of management adopted on them, and that the following observations are the result of my own experience and that of a few other sheep-owners on this island only.

I find that Merinos are very well adapted to this climate, and that besides the great increase in the value of the wool produced by their introduction, the cross between the unimproved native sheep and the fine-wooled rams imported from Australia, gives a better carcass, earlier maturity, and a greater amount of mutton than we had before. I have not unfrequently seen half-bred yearlings as large as their mothers. I have not seen the South-Downs imported from the States since the last meeting of the society, but I have heard that they are fine sheep, and I have no doubt of their being a most valuable addition to our stock of sheep here. I am of opinion however, that it is well to try to produce as fine wool as possible without deteriorating the carcass, as fine wool is always money, and it costs as little to shear fine wool as to shear hair.

With regard to the increase of sheep here, it seems almost incredible.—I have seen several ewes produce three and four at a birth, and I have one which produced five healthy lambs last month. Too much cannot be said in condemnation of the lazy, slovenly practice of allowing the rams to run with the flock all through the year, and of allowing all ages and sexes to run together. Great numbers of lambs are lost by so doing. By leaving the rams with them all the year, the ewes are dropping their lambs in mud and misery all through the rainy season, and by allowing the whole flock to run together, the wethers and the strong, young, dry sheep keep ahead all day, depriving the nursing mothers and heavy ewes of the best of the herbage. Many ewes desert their lambs by trying to keep up with the flock and by returning with the flock to the yard in the evening by a different

route from that by which they went out in the morning. Hitherto I have removed the rams from my breeders during the months of June, July, August, September and October, so that no lambs are dropped during the months of November, December, January, February and March. I find however, that it will be better to reduce the time of allowing them to run with the ewes to three months of the year, or at most four, so that all the lambing may take place within a corresponding period, and the crop of lambs may be weaned from the mother before allowing the latter to commence breeding again. I have seen repeated instances of ewes producing twins twice within six months, and such frequent parturition must exhaust the animals. Another serious evil resulting from allowing the whole flock to run together, is that the young ewes commence breeding much too early; they should not be put to the ram under eighteen months old at the very earliest, which will make them about two years old when they commence dropping.

The only disease which I know of among the sheep here, is a cutaneous one arising from cold and wet combined with low condition. It appears to be caused by obstructed perspiration and deficiency of the yolk or oil peculiar to sheep. It first shows itself by extreme dryness and absence of grease in the wool, then a scurfy appearance of the skin, and finally the wool comes off in places, generally on top of the shoulders. I have seen horses here affected in a similar manner by heavy rain. Sheep and horses seem to recover entirely, merely from being transferred to good pasture, enjoying warm weather and improving in condition. I have not heard of any authenticated case of scab, catarrh, or foot-rot here. I have seen a sheep poisoned now and then by eating some herb, but I cannot confidently state what the noxious plant is. I am under the impression that it is the Auhuhu, a plant or small shrub, used by the natives for poisoning fish. This is however eaten freely by the cattle without producing any injurious results.

I find that the Chinese coolies make good shepherds. It requires of course, a little trouble in the beginning (increased by the want of a ready mode of communication) to teach them what is necessary to be done, but they can be induced to remain all day with the sheep,

and to take care of them, which no native can be induced to do for any amount of remuneration. It is absolutely indispensable to have a shepherd constantly with the sheep to protect these most helpless of all our domestic animals, from dogs, mules, donkeys, and the thousand natural ills that sheep are heir to.

I use net pens for folding my sheep at night and recommend them strongly to sheep owners. Spun-yarn, or marline-stuff, made into a net of meshes about two inches square, the width of the net being about three feet six inches, ratline-stuff reeved through top and bottom and attached to the iron posts imported here for the wire-fencing, I find very convenient and easily shifted when any accumulation of dropping takes place. A yard built of sticks is also necessary to work in, as the net-pens are not well adapted for catching or draughting sheep in. A wooden yard, subdivided, is the best. Stone-pens must be of a great height to keep in the sheep, or to keep out dogs, and the wind cannot act so well to dry up the yard after the night.

A word on dogs to conclude.—Every man who tries to keep sheep here must depend on his own exertions to keep down the dogs and must expect violent opposition, ill will and even *being prayed to death* from his neighbors. Nay, if he is very energetic in slaying dogs, he may even expect to see himself petitioned against by name as an oppressor; some of our Solons presenting a petition to the House of Representatives to that effect, signed by six old women, five school-children, and four bereaved masters of hounds.

There is a nominal tax of one dollar a year on the filthy, mangy, mischievous curs, so dear to the native Hawaiians, not ten per cent of which is collected, and we see that every year petitions are presented by members of the House of Representatives, praying that this tax may be abolished; but when we see constituencies praying that *all taxes* may be repealed, and representatives gravely presenting such petitions, we cannot be surprised at their supplications in favor of their cherished lap-dogs. Let every sheep owner lay out the price of a fat wether or two every year on strychnine and wage incessant war by every means in his power against all the dogs within five miles of him, and he will find such a line of conduct much better protection to his lambs than the united wisdom of both our houses of legislature, and the Privy Council to boot.

REPORT ON VINE-CULTURE.

By J. Montgomery.

To the President and Members of the R. H. Agricultural Society:

In reporting to the Society on the subject of the grape-vine, it is gratifying to feel, that in this body, at least, its value, as well as its suitableness, to the soil and climate of these islands, is conceded, and that we have no longer to combat the hostility of some, who on former occasions, sought to discourage its culture, on the ground that we are "too far South," and that "grapes cannot be profitably grown in the tropics" and so forth. The cumulative experience of each succeeding season, goes incontrovertibly and conclusively to negative such obsolete theories, which cannot hold their ground against the every day evidence of our senses.

The duty which now devolves upon your committee, in dealing with this subject, is thus so far simplified, as to require, not a disquisition as to *whether the grape can be successfully cultivated* here, but *how* its culture, now admitted to be practicable, by a moderate expenditure of skill and labor, is best to be accomplished. I doubt if there be amongst us an individual who will now endorse the fallacious views and opinions, propounded by 'The Doubter,' in his criticisms on certain observations which I felt it my duty to embody in the annual address which I had the honor to read before this Society, at its last meeting, in which he asserted that the grape could not be profitably grown in the tropics, and which I rebutted by an array of facts, proving that grapes are grown and good wine made in large quantities, in much lower latitudes than ours.

I am indebted to some co-members of this committee for some valuable facts and suggestions, of which I have availed myself in this report, and I only regret that the construction of the committee rendered a meeting of its members unattainable.

The suitableness of our climate for vine-culture, being conceded, the next most important consideration in connection with the subject, is the selection of the best soil and situation for the full development of the fruit. It is generally known that volcanic countries are those in which the vine flourishes most and produces the best and most abundant crops. The best wines of Italy are yielded by grapes grown in the vicinity of Vesuvius, and large quantities are grown in

the neighborhood of Ætna; both Tokay and Hermitage, are the produce of volcanic regions. The close analogy of the soil of these islands with the places above named, and others equally productive, lead to the inevitable conclusion that only a careful selection of soil and situation and judicious management are required, to ensure the conversion of large tracts of our hitherto neglected and valueless hill-sides into productive vine-yards, and I entirely concur in the remark of Dr. Baldwin in his report on this subject, last year, that "so far as our observation goes, we should expect that the grape would flourish in every part of the islands where there is sufficient depth of soil, not too dry, well exposed to the sun, and where they are protected from the trade-winds."

On a surface so large and varied as these islands present, it can scarcely be doubted that there are large tracts of land, unreclaimed and valueless for any other purpose, which will come within the Doctor's description, and convertible to a profitable account That the alluvial soil of the valleys, formed by deposits of the disintegrated and decomposed volcanic rocks which form the basis of our mountains, combined with decomposed vegetable matter, is admirably adapted for vine-culture, no one who has visited Lahaina, on Maui, or Waimea valley, on Kauai, can doubt; and I presume many others of our sheltered valleys would be equally productive. But our valleys form only a small fraction of the entire surface, and besides are so very valuable for the raising of other important crops, which cannot be well grown elsewhere, that it becomes the more important to investigate with care, the other portions of the surface, with a view to finding localities, less valuable for other purposes, where the grape can be profitably grown, and whether the rocky hill-sides which in other volcanic countries produce grapes in abundance, cannot here also be made available for the purpose.

A soil abounding in rocks and stones, is that in which the vine flourishes most, in the majority of wine-making regions; and the rocky and precipitous hill-sides of Madeira, Teneriffe, the Azores and other similar countries where wine of high character is largely made for export, closely resemble our own barren mountain slopes. In these countries, the earth found in the interstices of the rocks, is

stirred up to a sufficient depth to receive the young plant, which finds usually sufficient moisture and shelter, to induce its rapid vegetation, and in the course of time its erratic shoots deposit and disperse themselves over the intervening rocks, where they find abundant heat and light to encourage the growth and the full development of their fruit, which in such a position matures with much rapidity, to great perfection.

That the same result will follow in similar localities on these islands has been already proved by several parties, one of whom, Mr. Cummins, of Kealakeakua, has at present a flourishing and highly promising little vine-yard on the stony surface of Kona, on Hawaii, a district which I apprehend, offers unmistakable evidence of its entire adaptation to vine-culture on a vastly extensive scale.

The elevation at which the vine will flourish and produce large and remunerative crops of fine fruit, is much higher than many imagine, and it is a great error to suppose, that it requires the high temperature of Lahaina to bring it to perfection. Dr. Baldwin states in his report of last year, that he has seen "the finest grapes, produced too, in great abundance, in Kuapehu, on Hawaii, at an elevation of 1,500 feet," and adds that his impression is that the vine-growing regions are of great elevation, in which opinion he is fully sustained by facts. On the same island, in Hamakua, and at about the same elevation, another of our enterprising settlers, Robert Robinson, has produced enormous crops of excellent grapes this season; but it is unnecessary to multiply evidence on the subject.

Possessing then, as these islands unquestionably do, a climate so congenial, a soil so suitable, and situation so extensively adapted to vine-culture, on a large and remunerative scale, and that too without encroaching on any part of our valley lands, so valuable for other important crops, does it not seem strange that any opposition should be offered to the attempt, laudably made, by one branch of our Legislature last year, to legalize and encourage the culture of the vine for the purpose of wine-making, a manufacture, quite capable from the vast extent of surface adapted to it almost exclusively on these islands, and exceeding in profitable and remunerative results all the other productions of our islands?

Next in importance, after the selection of suitable soil, for a vine-yard, is to secure a situation, either naturally sheltered from the trade-winds, or on which artificial shelter can be cheaply and easily made. Nothing will so effectually neutralize all our efforts to cultivate the grape-vine in these islands, with success, as exposure to strong winds; and a situation which is open to the merciless lashing of the trades, mayat once be passed by as hopelessly and entirely unfit for a vine-yard. The prevalence of the N.E. trade-wind here, is somewhat embarrassing to the vine-grower, inasmuch as exposure to the rays of the *morning* sun, is found in this country to be very beneficial to the quality of the fruit, and the difficulty of protecting the vine-plant from the N.E. Trades without, at the same time obstructing the genial morning rays, is one not easily surmounted. The close vicinity of shade-trees is very injurious to the vine, and I apprehend that in the present state of our labor market, both stone and adobie walls are out of the question. The only remedy I can suggest to those whose lands, otherwise suitable for vine-culture, are somewhat exposed to the Trades, as in a S. Eastern aspect, is to plant close belts of the bush-fig, to windward of the intended vine-yard, which in two or 3 years will form an excellent and valuable barrier, and at same time to plant parallel to, and at some distance farther to windward, deep rows of some suitable forest shade tree, such as the kukui, kou, and hau, which, standing at a distance of 20 or 30 yards from the vine-yard, will afford excellent shelter, without much obstructing the early rays, from the low angle which its distance will offer. Of course this remedy will not apply to situations with a Northern exposure. When the Osage Orange shall have been more generally introduced, I hope to see it applied to this purpose.

The mode of training the vine is also an important consideration. The object sought to be obtained by training, is to secure the largest crop of grapes of the best quality, and for the latter, an abundant exposure to the direct rays of the sun, both for heat and light, seems to be indispensable. In extensive vine-yards, the more usual plan is, to train each plant to a single pole, the plants being set in rows 3 or 3½ feet apart, each way, and this method seems to answer the purpose admirably, and at a small cost. Another method, perhaps best adapt-

ed for gardens, is to train the shoots on lateral trellices, about 6 feet high, but avoiding all *top shade*, which is always injurious to the quality and flavor of the fruit. The object desired seems to be equally well attained by this mode of training. So essential is the free exposure of the fruit to the genial influence of the sun's rays considered in many places, that the leaves which surround and would otherwise shade the bunches, are nipped off.

I regret to observe that our Lahaina neighbors, who boast with so much justice of the vast quantity of their grapes, seem to act on a principle directly the reverse of the one I have stated above, and appear to consider sunshine deleterious to the large bunches which are found suspended, in melancholy and hopeless gloom, under thick and impervious platforms of foliage and branches, which effectually exclude all possible access to the sun's rays. In my opinion, if they will adopt a different course, and allow the sun to fall upon the fruit, they will, ere long, be entitled to laud themselves as much on the improved *quality* and flavor, as they now justly do on the *weight* of their crops, one plant now in bearing at Lahaina, as I hear from Mr. Gilman, having 1000 bunches.

Those who contemplate cultivating the vine on stony hill-sides, need not be deterred by the drought of the climate; there will be found, at or near the surface, and among the stones, a sufficient supply of moisture to nourish the young plant, with a very trifling amount of artificial irrigation, till it shall have sent down its roots in search of the requisite nutriment. The rapidity with which the vine-roots penetrate the subsoil and find that food which they require, is astonishing. In removing some plants, one year old, in my garden, I found some roots 8 to 10 feet from the plant. Those who have seen the celebrated "Black Hamburgh" grape at Hampton Court Palace, near London, will have learned that it has sent its emissaries across and under the bottom of the river Thames, for upwards of two miles, in search of the amount of food requisite to nourish and mature the 3000 large and weighty bunches of splendid grapes, which form its average annual crop.

Humidity of climate, so far from being beneficial, is decidedly injurious to it, and in damp countries, grapes seldom come to perfection;

whereas, in some countries, where it never rains, as in Guayaquil, in Bolivia, and other parts of the South American continent, excellent grapes and good wines are produced in abundance, a sample of which wine I have had the pleasure to taste at the hospitable board of H. B. M.'s Consul-General in this city.

As regards the *kinds* of grape best suited for culture on these islands, it is rather premature to raise a discussion, having as yet so very limited a number on which to experiment. I observe much said in the United States, in praise of the Katawba grape, which I apprehend must be a very valuable variety, and I regret that, so far as I am aware, none of our American brethren have as yet introduced it. In 1851 I imported from Australia, 150 varieties of choice kinds, but they all perished except some 15 sorts which are now growing in my garden, and I hope soon to be able to put their cuttings in general circulation.

In discussing the important subject of vine-culture, I have hitherto gone on the assumption that it is desirable to be carried on, on an extensive scale; but if our present system is to be perpetuated, and that we are to be prohibited from using the fruit for any other purposes than *eating* only, it is idle to think of converting our now barren wastes into vine-yards, which could serve no useful purpose, or compensate for the cost of their formation. The application of a crop, for the encouragement of the culture of which, this Society awards annual premiums, I take to be within the scope of a report, and as such I would take leave to say that I trust and hope the time has gone by when the manufacture of wine for export will be opposed by any important sections of this intelligent community. Unanimity on this, or almost any other subject, is not to be looked for, and I have heard it asserted here that wine-making would have a demoralizing tendency, as conducive to intoxication and its concomitant evils; but since the uniform experience of all the wine-growing districts of Europe, as well as the not unimportant manufactures of the United States, especially as all Ohio, and elsewhere, concurs in testifying to the gratifying and instructive fact, that in these districts, drunkenness is unknown, I should be disposed to arrive at a conclusion directly the reverse of

the one adopted by the opponents of the measure here, and say that if the wine-making countries elsewhere, are the most temperate, there can be no reason to suppose that here alone, its results would be different, and I am not without a hope, that those who strenuously advocate what they call temperance, formerly, will yet advocate wine-making as a grand "temperance movement." A measure which seems so clearly calculated to augment the resources, while it also improves the morals of nations, is assuredly well worthy of our best encouragement.

To occupy time in proving the vast amount of profit, derivable from wine-making on a large scale, seems almost superfluous, as all must be more or less aware of its great value and importance, I would however, refer to its progress on the "Rhine of America," the river Ohio, to which I have before alluded, where 2,600 acres of land, were in 1853, exclusively devoted to grape-growing, the average annual yield of which are about 800 gallons of wine per acre. Estimating this wine at the average market price of $1 per gallon, produces an amount which completely puts in the shade *all* the products of these islands; and yet 2,600 acres is probably only a fraction of the land admirably adapted to the purpose on this group. With the markets of Oregon, California, South America, Australia and other places, open to us, we need not fear that our produce will not meet a ready and remunerative demand.

The only serious impediment which I can see, to the culture of grapes for wine, here, is the constantly recurring one of the scarcity of Labor. I find that on the Ohio, nearly all the culture is carried on by German Immigrants, who work on shares. Of late years, our little community has had many valuable acquisitions in the settlement amongst us of a number of Germans, of most exemplary character, and it is not unreasonable to hope that these pioneers will ere long, be the means of inducing some of the laboring classes to migrate hitherward, who may turn their attention to the subject, I have attempted to advocate. I have had opportunities of witnessing the beneficial results of German settlement elsewhere, and am earnestly anxious for their advent to this group.

In conclusion, I would beg to say, that no other member of the

committee of which I have been made chairman, is responsible for the views I have put forth on the subject of wine-making.

Respectfully submitted.

1st June, 1854.

REPORT ON ROADS, HARBORS, &c.

By W. Webster.

To the President of the R. H. Agricultural Society :—

Your committee are sorry to say, that with but little exception, they are unable to report any visible improvements on our roads during the past year, although they have observed in some districts the usual amount of labor expended in ineffectual endeavors to better their condition.

Your committee are of opinion that the present system of road management and taxation is inefficient and unequal ; and taking into consideration the importance of good roads to the agricultural development of the country, your committee would press upon the society the necessity of some endeavor being made to move our legislature towards revising and changing the present laws.

Choosing the road supervisors, by election, where the roads have to be *made*, is not very good policy, as with few exceptions, the officers thus chosen are not sufficiently skilled to enable them to make a durable road, where there are any engineering difficulties in the way ; and the result is seen every winter, when the whole of the previous season's improvements are washed away. There is also a great want of checks on the probity of the supervisors, and although your committee have no doubt that the majority of them fill their offices with honor, still they are of opinion that having the accounts audited—if such a thing were possible—would be for the advantage of the taxpayers. Another evil connected with the election system is the fact, that the candidate who will compromise the tax on the most moderate terms is sure to be returned, and the consequence of this is evident.

Some hopes were entertained that the law passed last year, authorising the commuting of the road labor tax for $2,50 instead of $6,00,

as formerly, would have a good effect, as the commutation would be more universally paid, and it would enable the inspectors to procure suitable material for bridges, &c. These hopes have not been realized, and the only visible effect produced by the measurs is the improved appearance of some of the inspectors.

To augment and equalize the road tax, your committee would recommend that a tax of one dollar pr. head be placed on horses, and also a small tax on all cattle taken to market,—but they would not recommend this until some sufficient check has been placed on the parties receiving the tax.

If the proposed bill of the present session becomes law, it would perhaps be wise to make the collectors connected with it also collect the road tax and disburse it again, through the interior office, by contract on the roads.

The general features of the country present serious obstacles to road making, and although the present tax may be sufficient in some districts, in others it is totally inadequate, and nothing but government appropriations will ever enable us to have roads in those districts,—as for instance a wagon road from Lahaina to East Maui would be of immense benefit, but to make it without an appropriation is impossible, unless a turnpike company takes it in hand. Also the road in Nuuanu Valley and the Pali descending to Koolau ought to receive attention, as a worse road with an equal amount of traffic exists no where in the world.

Your committee are sorry that for the present, from unavoidable causes, the proposed improvement of the water lots and harbor of Honolulu has been postponed, but they hope that the difficulties with which the government have had to contend will not prove permanent.

Since the last annnal meeting of the society, a great stride has been taken toward improving our inter-island communication by the introduction, by her enterprising owners, of the steamer "Akamai" to our waters; and your committee are glad to learn that a larger and stronger vessel belonging to the same parties is on her way to our shores.

Your committee are of opinion that the measure introduced into the lower house, to open our coasting trade to foreign vessels, would if

passed have a very excellent effect, and would tend greatly to the benefit of agriculture by giving the farmers additional opportunities of carrying their stock and produce to market. At present our coasting fleet cannot boast of a single vessel capable of carrying a load of live cattle from Kawaihae to Honolulu.

Attached is a communication from one of the members of this committee, (Capt. Penhallow) on the improvement of various of our anchorages and harbors, with which subject he is professionally acquainted, and whose views are the result of many years experience.

WM. WEBSTER, Esq., *Chairman Committee on Roads and Harbors :*

SIR :—As a member of your committee I herewith transmit to you a few items for your report ; if they will be of any service, make what disposition you please of them. I have examined some of the ports on the different islands, viz ;—Hanelei, Koloa and Waimea, on the island of Kauai ; Kahului and Hana, on the island of Maui ; Hilo and Kawaihae, on the island of Hawaii. I fully expressed my opinion in regard to the port of Honolulu many years since, when the opening of the bar could have been effected at small expense, labor being at that time 12 1-2cts. pr. day, and government having several vessels which were employed in transporting Kanakas from the smaller ports to those most frequented by merchant ships and whalers—which vessels would have answered the purpose of clearing the bar. However, with the assistance of steam, which we shall soon be able to have for the purpose of towing, difficulties which now seem insurmountable may be overcome, and ships of the largest class enter the harbor in safety.—There are many other ports which I have not yet visited that could be made a *lea* of in bad weather at a small expense, which I hope to be able to visit the coming year.

The following would be the probable expense of opening and improving the following harbors for steamers and coasters, with a draft of water—say ten feet :—

Island of Kauai, port Hanelei, to place anchors, chains and buoys,	$800
Koloa,—anchors, chains, buoys and ring-bolts,	1,000
Nawiliwili Pier,—anchors, chains and buoys,	3,000

Island Maui,—Kahului, to remove obstructions and place buoys,	1,000
Hana,—placing anchors, chains and buoys,	1,000
Island Hawaii, port of Hilo,—two anchors and and chains, with buoys (heavy,)	1,500
Kawaihae,—removing some obstructions,	3,000
	$11,000

I have the honor to remain, Sir, your ob't servant,

D. P. PENHALLOW.

Honolulu, June 12, 1854.

REPORT OF THE CHAIRMAN OF THE COMMITTEE ON ARROW-ROOT, AND ITS MANUFACTURE.

By B. Pitman.

Mr. President:—The climate of Hilo is so admirably adapted to the growth of Arrowroot, (growing spontaneously throughout the district,) that by the natives it is seldom, if ever, made an article for cultivation. A few years ago some native Konohikis instituted a labor-day, for the purpose of planting arrowroot, but on account of the low price only obtainable for it, and the length of time which it took to prepare it for market, by the simple and primitive means used by the natives, it was abandoned as unprofitable, which a very little reflection will prove to be an error; although as the native, to this day, can scarcely be convinced that "time is money," they argued correctly. For instance, a woman intending to make arrowroot, will go out in the morning, and return in the afternoon with a back-load of the tuberose roots, which she either deposits in a small stream of water or covers carefully with green fern. She will thus continue every day to increase her lot for a week. Supposing her to commence on Monday, by Saturday she will have collected about three barrels. On the ensuing Monday she commences cleansing it from earth and carefully picking out the eyes, which processes will consume a couple more days. She then scrapes off all the outer skin, re-washing the arrowroot, and leaving it still in the water until the following Monday, when the process of grinding it commences, which is done by grating it on a sheet of tin or copper punched full of holes,

and nailed to a piece of board like to a nutmeg-grater. As it is grated, it is put into calabashes filled with water, into which is flung a handful of wood ashes to render it uniformly white as the young arrowroot, or that which is only one year old, is always of a yellowish red color. The washing is repeated until all the bitterness is removed, it is then made into cakes and dried ; thus the whole process, until the article is fit for market, occupies a period of some three weeks if the weather is fine.

Arrowroot requires but very little labor and as little cultivation — The more it is cultivated, the less will be its produce ; for although the roots will be larger, (under cultivation) the quality of parenchyma or fibrous parts also become proportionably greater, and the amylum less. A barrel full of tuberose roots uncultivated, will yield from thirty-five to forty pounds of arrowroot, while a barrel full of cultivated will not give more than thirty pounds. By uncultivated I mean such as grow wild.

To make arrowroot a profitable article would not require any large amount of capital, neither much labor or expensive machinery. A mill, such as is used for grinding bark, large tubs or vats, wire and lawn sieves, and a drying house, thatched and lined with brown cotton down to the eaves, are the only and simple requisites.

Six barrels of roots will plant an acre of land, to be planted in alternate rows three or four feet apart; that is to say, the second row to be planted opposite the spaces of the first, about eight to twelve inches in depth. Make a hole with a dibble, put the roots in, cover them up, and the labor is performed. The ground must not be cleaned, as it would lessen the product. Arrowroot is not fit for digging the first year, but the second it will be ripe and fitted for use. The same land will continue for years suited to the growth of arrowroot, if a few good seedlings are left in the earth.

There has been a greater demand for arrowroot this year than last, and a great quantity of the young root has been maunfactured, which will prove detrimental to the next year's growth.

Hilo, 10th May, 1854.

REPORT OF THE COMMITTEE ON DOMESTIC MANUFACTURES.

By J. H. Wood.

Hon. W. L. Lee, President, and gentlemen of the R. H. Agricultural Society :—

It would have been very gratifying to me, as chairman of your committee on domestic manufactures, to have presented a report that would have been at once interesting and valuable to your society, but with the exception of the manufacture of news and gas, both of which are in a very flourishing condition, I regret being compelled to say that I find material for such a report limited in amount and meagre in quality : and I doubt not your committee offering premiums, fully realized my unpleasant situation, when they lengthened their list of domestic manufactures nearly three-fourths, by including wax, shell, plain and ornamental needle work, embroidery, machinery, &c. But as your society deemed the report offered by myself and colleagues for 1853 worthy a place among the truly *valuable* ones presented, I take courage, well assured that we have gone ahead during the last year, making some important improvements in manufactures, and that our course is still onward with increased speed.

With regard to most of the staple articles of manufacture of other countries, such as cotton, wool, iron, glass, leather, earthern, paper, &c., for the most of which we have, or might have, the raw material, and for all of which we have a demand for consumption, I hardly need say that the want of capital and labor appears likely for the present, to compel us as heretofore to look to other and older countries for our supplies.

But, gentlemen, we have made a beginning, and that, too, in the right way. We have commenced the manufacture of the "staff of life," and I think fully demonstrated that, for the future, we shall not only manufacture our own, but will be able to furnish our neighbors and visitors with either hard bread or "soft tack," at a rate that will put competition at defiance. And to make amends for the past, without following "in the footsteps of our illustrious predecessors," patronizing the rickety, creaking machines propelled by wind or water, only when fortune favored with a supply, we have taken a long stride,

with telegraphic speed, from the pestle or handmill to the beautiful flouring mill, with its latest improved machinery, propelled by steam. The enterprise of some of our worthy citizens has erected a mill, at an expense of some twelve thousand dollars, capable of turning out one hundred and fifty bushels per day, of flour or meal, with machinery and fixtures, except stone and increased power, for manufacturing three times this amount.

Another individual, I believe at his own expense, has imported and erected on another part of this island, an improved mill of smaller capacity, but amply sufficient for the wants of that district.

A second, at his own cost, has erected and has now in successful operation, an establishment which will not only supply our cabinetmakers with material for their manufactures, but furnish an article of exports from our forests of beautiful cabinet wood, heretofore valueless except for fire wood ; besides a large amount of boards, plank, and joist for building purposes.

While a third, also at his own expense, and almost with his own hands, has established and put in operation, at an expense of some twelve or fifteen thousand dollars, a machine shop, iron and brass foundry, capable, with its ingenious and energetic proprietor at its head, of casting or forging, finishing and putting in operation the metal part of any and all kinds of machinery, which may be required in this kingdom for the next ten years.

Machinery to aid in the manufacture of boots, shoes and clothing, has been imported and is now on the way.

The manufacture of cabinet and upholstery work is steadily on the increase, and we doubt not with our increased facilities and beautiful woods, will ere long supersede imported goods of this description.

The manufacture of clothing is likewise steadily increasing, but we regret to say, while we might furnish the raw material in abundance, we see no immediate prospect of supplying ourselves with cloth adapted to the wants of the kingdom

The same is true of boots and shoes. A great many pairs are made in different parts of the kingdom—many of which however are inferior in quality and style, yet foreign upper leather and sole leather for the best work, are prefered to Hawaiian. And as I had occasion to re-

mark in my report of 1851, while we have thousands of the best of hides and skins for exportation, and an abundance of material superior in quality for tanning, a large and increasing demand for boots shoes, harness, saddles, and the various manufactures of leather, I can see no good reason for exporting the raw material, employing foreign capital and foreign labor, to deliver us an article of inferior value, as all leather goods must be, after an ordinary sea voyage from the Atlantic States or from Europe to this port.

All that is wanted to stop at once the importation of foreign leather, and to greatly increase both in amount and quality, the domestic manufacture of all merchandise made from leather, is one or two energetic practical men, (like our machinist,) masters of their business, at tanning and currying, with a few thousand dollars capital which they seek to invest in a safe, profitable and permanent business.

In the cultivation of tobacco and the manufacture of cigars, for which we have a large and increasing demand, those engaged have met with some disappointments owing to want of experience in climate and curing tobacco.

But the business appears to be in the hands of those determined to do battle with all obstacles, and who are sanguine that complete success must crown their efforts.

The salt business, one of our principal articles of domestic manufacture, and unlike that of sugar and other branches requiring a heavy investment in foreign machinery and fixtures, has been somewhat interrupted during the past year, owing to the prevalence of small pox, and the consequent lack of native labor during the season for its manufacture; and although sufficient has been made to meet the wants for home consumption, the supply has fallen considerably short of the demand for exportation.

The business however is well established, sure and profitable, with a constantly increasing demand and a corresponding supply, and must continue an item of importance in our future exports.

Having a special committee upon the manufacture of arrowroot, you will not expect me to allude to that subject.

In regard to the principal articles of *native* manufacture, I have been unable to collect statistics or data upon which to found a reliable

report, and will only say that quite a large amount of business is done yearly in the manufacture of kapa, mats, fishnets, canoes, ropes, hats, pipes, combs, brooms, leis, jewelry, &c., &c., which are retailed among themselves.

Your committee would suggest the propriety of offering premiums for articles of merit in the domestic manufacture of boots, shoes, leather, saddles, and salt, fully believing these various branches are of equal importance with many for which premiums are now offered.

REPORT OF THE COMMITTEE ON IRISH POTATOES.

By G. D. Gilman.

Mr. President of R. H. A. S. :—The subject of the "Irish Potato" is an important one, and I could well have wished that it had been intrusted to some more competent person, whose practical knowledge and experience could have been brought to bear on one of the most important of our agricultural productions.

Of the early introduction of the Irish potato at the islands, I can learn but little ; but some time previous to 1830 a few Irish potatoes had been left here, it is presumed, by some whaleship, and an "old resident" informs me that from '30 to '35 they used to consider themselves fortunate in getting an occasional calabash full, from some of the valleys back of Lahaina. A few found their way to Wailuku, on this island, and for years there was but one patch cultivated at that place. From that patch the seed is supposed to have been taken to Kula, or as it is sometimes called, the "Potato District," which is that belt of land lying on the side of the mountain Hale a ka la on east Maui, about 2000 feet above the sea, and extending from Makawao to and inclusive of Honuaula, or Mr. Torbert's plantation.

From 1840 the natives have been paying more attention to the cultivation of the Irish potato, and have found a ready market in the spring and fall visits of the whaling fleet, who were but too glad to avail themselves (from '40 to '48) to trade cotton cloth at 25cts per yard, that cost from 8 to 10cts, in exchange for the potatoes at $3, and often at $1.50 per barrel.

It seems almost incredible at the present time, and at so few years

removed, that the natives would plant, (cultivate they did not—nature was generous) and when ripe, dig the potatoes, *back a barrel at a time to the beach, a distance of* 10 *to* 12 *miles*, and sell them at *Fifty Cents*, yet hundreds of barrels were thus brought in, for years up to 1847, when some few carts and pack bullocks were brought into use.

In 1848-49 the American schooner "Boston," (now the "Caroline") commanded by Capt. Cole, an old whaleman, quietly left San Francisco for these islands. Arriving here, he obtained a part of a load of Irish potatoes and returned to San Francisco. The potatoes were sold at from 25 to 28 cents per pound, (there being none in the market,) or at the rate of *forty or fifty dollars per barrel.* He made a second very successful trip, although not obtaining so high prices as the first.

The reports of the success of those engaged in the speculation could not be kept silent, and quite a number of large and small craft entered into it, and the custom house returns for '49, '50 & '51, show that it was the most important and largest branch of our exporting trade.

It is to be very much regretted that the natives were so improvident of their golden harvest, but like too many who embark on the high waves of prosperous speculation, they forgot the treacherous nature of the elements, and that they could not count on the continuance of Fortune's showers.

Of the many natives who have handled thousands, there are few if any that can show as many dollars, either in improved places, stock, or money. The fields are in a measure deserted, and the happy (?) proprietors quietly awaiting another shower.

It was very unfortunate for us that there were so many poor Irish potatoes exported to California in '49, '50 and '51, and I think the facts may be worthy of notice as not being evidence against us.

The supplying of the fall fleet of whalers of '48, had taken most of the crop that had been prepared for the market, and when the sudden demand from California came on, and the call was loud, Potatoes!—Potatoes! the natives gave "all they had, and more too," that is, they not only took all that were in the ground fit to dig, but the cry still being "give, give," they brought "seedlings and mother," and

almost stript the fields; and for months there was scarce time given for a crop to arrive at maturity, before the active competition of the many purchasers urging the natives to bring in their potatoes, which, as *they* never raised them for their own use, were only valuable as they brought money, they were willing to sell green or ripe, at from $5 to $9 per barrel.

That we can raise good, *first-rate*, Irish potatoes none can deny who have passed through the fields, and seen the richness of the soil and favorableness of situation and climate.

Of the varieties of the Irish potatoe I have seen but three—the Red, White, and the long Pink-Eye, similar to the Chenango. The last is far the best for baking, and not near as good for boiling as the red or white. It is more generally raised (or was) on Hawaii than here. Of the merits of the red and white, I think it is generally admitted, that for home consumption the white is preferable, and that the red is better for exportation, as it does not seem to gather moisture with age like the white, and generally stands the voyage better over the salt water. Many an island red Irish potatoe has graced the tables of California as "fresh from Oregon," and until the past year, found a ready sale by hailing from another locality, prejudice being so strong against those of the Island-growth, owing to the disagreeable remembrance of those taken there from here in '49 to '51, that no price would be given for them if they were reported as coming from the Islands, while 6 and 8 cents per pound would be willingly paid if they were told they were of California raising.

The last year the trade has entirely changed, and while in '51 we exported to California, in '54 potatoes brought from there have been sold at a profit and a reasonable price.

As we cannot reasonably hope to export for a foreign market, let us look at what demand we have at home.

The spring fleet of whale ships touching here on their way to the northern cruising ground, will average 125 to 150 ships, which take 7,500 to 10,000 barrels.

The fall fleet will probably average 250 ships, and will take, say 6,000 to 7,500.

The demand for home consumption I think can be safely set down

at about 5,000 barrels. Calling for on the aggregate 20,000 barrels of Irish potatoes, for which a market is ever ready at our door, and no insignificant amount paid in exchange.

With regard to the improvement of the crops in quality, I hope the society will be favored with a report from other members of the committee, who have the advantage of practical knowledge to add weight to their suggestions.—All of which is respectfully submitted.

Lahaina, Maui, June 1, 1854.

REPORT OF THE COMMITTEE ON POULTRY.

By H. M. Whitney.

The subject referred to your committee is one, the familiarity of which renders it more difficult to treat it so as to make it of interest to others. Very little has transpired during the past year worthy of special note in this department, and if anything of interest is noted, it must be devised by our ingenuity.

Whoever, here at the islands, undertakes the breeding of fowls, finds it a business in which theories, fancies and speculations will be of but little benefit; he has undertaken a matter of fact business, in which the drawbacks to success are so numerous, that only the most untiring perseverance will accomplish anything.

Your committee are not aware that the checks to the successful rearing of poultry throughout the islands, numerous as they are, are more or greater than are to be met with in other climates. But they are much more felt here. Among the causes which prevent the successful breeding of fowls are, 1st,—the haste with which the hen forsakes her nest, frequently before one-quarter of the eggs are hatched. This disposition in the hen is owing mainly to her being disturbed with vermin; 2d, after the chicks are hatched it is exceedingly difficult to raise them, and this difficulty appears to increase the greater the precaution taken to confine the mother. The young chicks are killed by scores by the monstrous rats which infest all our yards, as well as by the too numerous cats, which instead of being the antagonist of the rats, seem rather to have formed an alliance with them, offensive and defensive. From numerous trials made, the best plan appears to be

allow the mother perfect freedom with her brood, not cooping them but taking care that they remain at night in as secure a place as possible from rats, cats and dogs.

Another serious drawback to the successful raising of poultry, is the thieving propensity of the natives, whose artful plans frequently defy the most vigilant watching.

Still there remains much to encourage all who have any interest in this most delightful branch of domestic economy. The beauty of a choice and well selected poultry-yard, throws an air of comfort and elegance around a homestead, second only to that imparted by the cultivation and display of choice flowers.

Your committee have endeavored to collect some data, showing the number of poultry on the islands, with the number annually reared, as well as the probable number of eggs produced yearly, together with the export of all kinds of poultry ; but the facts obtained are so few and vague, as hardly to give a reliable approximation to a correct statement. They would recommend, however, that the subject be further investigated as full of interest.

An estimate has been made that there are over 75,000 fowls, of which about 60,000 are hens, which annually produce about 720,000 eggs. Of turkies it is estimated there are on the group at least 6,000. Of the fowls, it is supposed that 25,000 are killed or die annually, of which probably only 8 or 10,000 are yearly killed for food, including what are sold to foreign vessels.

An effort has been made to obtain the number and variety of breeds now on the islands, together with the peculiarities of each, but so little success has been had, that the subject must be deferred to a future report.—Respectfully submitted.

Honolulu, June, 1854.

REPORT OF THE COMMITTEE ON THE OLONA.

[TRANSLATED FROM THE HAWAIIAN.]

To the President and Gentlemen of the Hawaiian Agricultural Society :—

We, the undersigned, were appointed a committee by the Agricultural Society to consider the olona, and other material suitable for twine and cordage, the growth of this country.

In consequence of the limited time remaining to the committee in which to report, we are not thoroughly prepared to go fully into the subject ; but perhaps a limited report upon the subject committed to us will be better than none. We therefore submit some of the more prominent facts, in relation to the growth and manufacture of these things into cordage.

There are several ways in which the olona can be propagated, all of which are employed. It is best propagated from the young plants, which should be carefully transplanted into good soil. Another mode is, to plant cuttings of the old shrub, which should be laid down and covered with earth, when they will throw out sprouts and take root. When the sprouts have acquired some size, they can be cut off with a knife or hatchet, with the roots, and planted out carefully, with some earth attached to the roots, when they will soon grow. When planted in either way, they should be kept weeded and free from grass, and in a year they will come to maturity. When ripe, care must be taken in cutting, lest the young sprouts be injured.

In preparing the olona, the bark is carefully peeled from the wood, and it is the middle bark that is used. The following is the process :

A board 8 or 10 feet in length is provided, about 6 inches wide, and a piece of tortoise shell made sharp like an adze. The bark is laid flat upon the board, and the outer bark is removed with the shell. It is then turned over, and the inner bark is removed, when a thin slip is left, of exceeding strength, which is the valuable part of the olona, and exceeds in strength and value all other Hawaiian material for cord or rope.

There are many other shrubs upon the islands of a nature similar to the olona, such as the following :—the maaloa, mamaki, hopue, kukui ; which, if taken at the proper state, are nearly equal to the olona for toughness and strength.

The proper place for planting the olona and other shrubs for cordage, is by springs and wet places, where the soil is constantly damp by natural moisture or rain. In proper places these will all grow well, without trouble, if planted and taken care of according to the nature of the plant.

There are also many other things, besides those enumerated, which are used for making cord and rope in this country, but on account of

the short time remaining for making reports, we cannot specify them at present. All the people are acquainted with these different kinds of cordage. It is of the olona principally that we speak.

It is clear to your committee, that if the olona is well cleaned, and could it be separated into its distinct fibres by machinery, and then manufactured into strands, and these strands laid into rope, with the care and skill bestowed upon the cordage of foreign countries brought to this country, it would exceed in strength any foreign cordage ever brought here, either in its original state or tarred.

The olona has always been held in high estimation in this country, by chiefs and people, and has always commanded a high price from the most ancient time to the present day. It is very valuable for fish-nets, and is used for a great variety of purposes.

In regard to the olona, it was said by the ancients,

"Hihi ke Olona, kaula helehonua,
Ka lino, ke kaula o ka moku o Hawaii,
I nakia'i a paa kela moku,
Oia hulihia mai ka moku,
A hina kuapapa o ka aina."

Foul is the cordage, entangled are the ropes,
The cords, the tackle of the ship Hawaii,—
Bound strong, and worthy was that ship;
But now she is a ship keeled over,
And fallen, quiet rests upon the land.

S. M. KAMAKAU,
J. KEKAULAHAO,
J. W. E. MAIKAI.

REPORT ON SAW MILLS.

By T. Metcalf.

Kaupakuea, May 25, 1854.

Wm. L. Lee, President of the R. H. Agricultural Society:

Sir:—You requested me to give you some information in regard to my saw mill at this place.

The mill itself is of the *Flutter Wheel* description, single saw, with *Patent Head Blocks*, and all the other work is of the latest improve-

ment. The mill works admirably, and is now in full operation. It saws easily 100 feet of inch board per hour.

There is sufficient koa and ohia timber near the mill to keep it going for ages. I have about 80 yoke of bullock, well appointed for hauling the logs ; and I shall be able soon to nearly supply the Hawaiian market with the best of building material, *provided* there is sufficient patriotism in the land to patronize its own manufacture.

I am preparing to put up circular saws for cutting clapboards, shingles, &c , &c.

REPORT OF THE COMMITTEE ON AGRICULTURAL AND COMMERCIAL STATISTICS.

By S. N. Castle.

To the Hon. Wm. L. Lee, President of the R. H. A. Society:

Dear Sir:—It was my intention to prepare a report upon Agricultural and Commercial Statistics, but I have not been able to procure and arrange sufficient data to present a report which would be satisfactory to myself or of very particular interest as I thought to the Society. I enclose letters from the following members of the Committee, which will interest the readers of our transactions, should you find space for their publication, viz :

B. Pitman, Esq , Hilo; G. D. Gilman, Lahaina; W. Goodale, Honolulu.

Lahaina, Maui, May 9, 1854.

S. N. Castle, Esq.,

Chairman of the Committee on Agriculture and Commerce:

Dear Sir:—Your notes of the 17th and 18th of April conveyed the first intimation I had of being associated on the Committee of which you are chairman.

I am not aware of any tables of statistics being kept here that show the amount with any degree of accuracy of the Agricultural productions exported from the Islands.

The productions of the large sugar estates of East Maui, which

comprise nearly the whole amount of wealth invested in Agriculture, are taken directly to your port and appear there as "Exports from Oahu." The amount expended by the whaling fleet this spring I should think would be about twelve thousand dollars for their recruits, viz: Irish and sweet potatoes, pumpkins, and fruits.

In reply to your inquiry relative to "first transactions in exchange," I would state that there have been from forty to forty-five thousand dollars invested here this season, the greater part of which was cash sent here from Oahu for investment and returned there in bills of exchange, less the commissions for investing, the money being expended, and the "bills" being drawn here. The amount of similar transactions last fall was about ———

If you should find any thing in the above which may be of sufficient importance to *incorporate* in your reports, I shall be pleased, but would suggest, that "*as it is*," it is not designed as a Report.

Yours, truly, G. D. GILMAN.

HILO, May 10, 1854.

S. N. CASTLE, ESQ.,
Chairman of Commercial and Agricultural Statistics of the Islands:

SIR:—Your esteemed favor of the 17th ultimo, reminding me that I was a member of your Committee and desiring matter thereon, was duly received by me, and it is a matter of the deepest regret to me that I cannot respond to your call so liberally or interestingly as I could desire. It is with exceeding difficulty at any time, that full and reliable information can be collected from our planters and farmers, as to what they may have done, or what they are likely to do, and in the present instance our weather for a length of time past has been of such character as literally to have cut off communication with those living at any distance, and I am thus unhappily deprived of information which I had counted on in anticipation as the principal feature of my report—thus circumstanced, I furnish a case in point, which I think ought to convince the most sceptical of the undeniable force of the hackneyed adage, that "man is the sport of circumstances."

Owing to the scarcity of material necessary to a Report of this kind,

I have referred to the one which in 1852 I had the honor of forwarding to the Society in order, if possible, to frame some comparisons of a character bearing the stamp of advancement. It is a saddening fact, yet must however be admitted, that the march of improvement has by no means been so rapid in our district as to either entitle us to the gratulations of its well wishers, or draw upon us the envy of our sister districts.

We are still laboring under the same disadvantages as I touched upon a couple of years since. As regards our roads, they are in much the same condition, and the frail accommodations, (bridges by courtesy,) thrown across the numerous ravines which lay between our district and that of Hamakua, are no sooner as our Supervisor of roads emphaticatically pronounces "*pau*" than they are in need of repairs. Still, "Rome was not built in a day," and although I remark these matters, it is less by way of complaint than regret, that this barrier to the advancement of our district should exist, trammeling our commerce and communication with the several districts of Hamakua, Kohola and Kona. Enclosing a memorandum of statistics,

I have the honor to be, sir, your obedient servant,

B. PITMAN.

STATISTICS.

Total number of arrivals at the Port of Hilo for the year ending with date.

American whale ships, - - -	78	
do. Sloop-of-War, - - - -	1	
do. Merchant Brig, - - -	1	
	— 80 Vessels.	

Home Produce, &c., supplied to the above, viz :

Fresh beef,	55,066 lbs.,	*a*	7 c.,	$3,854 62
Salt, do.	5,710 "		8½	485 35
Fowls,	140 doz.	3		420 00
Turkeys,	339	1		339 00
Hogs,	202—10,100 lbs.		6	606 00
Goats,	174		50	87 00
Potatoes, (sweet,)	1,602 bbls.	2		3,204 00
do (Irish,)	1,493 do	2	50	3,732 50
Cocoa nuts,				121 00

Bread fruit,			$137 20
Taro,			84 00
Pumpkins,	3,325	10c	332 50
Cabbages,	1,200	3	36 00
Bananas,	820 bunches,	25	205 00
Arrow root,	580 lbs.,	6	34 80
Coffee,	3,952 do.	12½	494 00
Oranges,	3,950		98 75
Pine apples,	1,380		30 40
Melons,			64 40
Pulu,	1,979 lbs.	6	118 74
Wood,	158 cords,	$10	1,580 00
Molasses,	3,860 galls.	15	579 00
Syrup,	737 do.	37½	276 37
Sugar,	8,082 lbs.	6	484 02
Sole leather,	377 do.	25	94 25
			$17,499 80
Amount of imports by whale ships admitted free of duties,			6,378 25
Amount of imports by whale ships subject to duties,			1,770 74
Amount transhipped, same being products of the whale fishery and free of transit duty,			67,977 76
			$76,126 75

HOME PRODUCE SENT COASTWISE.

60,000	lbs.	coffee, valued *a*	13c.	$7,800 00
15,000	"	arrow root,	6	900 00
7,000		goat skins,	12 1-2	875 00
2,000	lbs.	sole leather,	25	500 00
50,000	galls.	molasses,	10	5,000 00
140,000	lbs.	sugar,	5	7,000 08
10,000	feet	koa lumber,	6	600 00
10,000	lbs.	pulu,	5	500 00
				$23,175 00

Hilo, May 1, 1854.

S. N. Castle, Esq.,

Chairman of the Committee on Statistics:

Sir :—I regret that other demands upon my time have prevented me from preparing such statistics as would prove more interesting and available to our Society than any I have to offer. I will merely give

some of the facts and figures which are in themselves of little value, and leave it for some other member of this Committee to make such comparisons and deductions as will give them interest.

The following is a continuation of a table of the principal domestic exports published in the "Transactions" of 1853.

		Average 4 years. 1849—1852.	1853.
Sugar, lbs.		602,453	634,955
Molasses, gals.		41,188	58,448
Syrup, "		40,302	18,244
Coffee, lbs.		102,579	50,506
Salt, brl.		5,656	3,509
Irish potatoes,		20,234	15,464
Sweet "		5,893	8,979
Hides,		1,680	1,741
Goat skins,		28,914	5,600
Tallow, lbs.		7,434	16,452
Wool, "	1852,	368	10,824
Fungus,	"	4,856	20,000

Although from the above there appears to be a falling off in some of the principal articles of export, as syrup, coffee, salt and goat skins, the value of products furnished for export and supplies exceed the same for 1852, and are nearly equal that of 1850, notwithstanding the epidemic which prevailed throughout the group in 1853.

Probably nine-tenths of the sum paid for supplies was for beef, both fresh and salt, and for potatoes.

It may be interesting to know the amount and value of some of the articles imported during the year 1853, especially of such as can be produced here. The following was prepared from entries passed at the Custom House in Honolulu only, and does not include the vast amount bonded or transhipped in this port:

Beef, brls.	973	
do. hf. do.	42	
do. tierces,	21	
do. casks,	38	
		—$15,321 15
Pork, brls.	731	
do. hf. do.	170	
do. tierces,	25	
		—$16,746 92

Flour, brls.		3,461	
do. hf. do.		170	
do. bags,		36	
do. tierces,		37	
			—27,972 17
Bread, lbs.	296,241		12,208 39
do. 235 casks,			3,794 05
Beans, lbs.	63,839		1,475 09
do do.			428 10
Corn,			422 20
Meal,			667 25
Barley, lbs.	108,940		2,090 97
do. bags,	158		415 31
Buckwheat, lbs.	8,996		379 28
do 7 cs.			86 90
Oats,			1,806 20
Peas, 15 hf. brls.			63 80
Cocoa nuts.			27 00
Onions,			140 00
Pickles,			1,123 12
Preserved meats,			12,886 60
Hams,			4,303 85
Salt,			120 32
Rice and paddy,			15,022 32
Oranges,			150 40
Potatoes,			390 54
Vinegar,			457 42
Tongues,			768 11
Lard,			1,201 19
Eggs,			82 36
Butter, lbs.	25,499		6,476 43
do.			2,157 70
Cod,			1,439 39
Salmon,			14,457 50
Sugar refined,			5,286 66
Cheese, lbs.	12,256		1,691 92
do.			337 00
Herring,			137 25
Mackerel,			1,597 52
Soap,			3,705 92
Leather,			2,019 87
Harness,			2,695 68
Saddles and bridles,			11,292 15
Boots, shoes, &c.,			56,977 36
Tobacco,			17,539 50
Cigars,			17,050 96
Nets,			96 00
Hops,			1,553 86

Ale, beer and porter,	25,520 25
110 swine,	100 00
4 sheep,	280 00
2 bulls,	450 00
2 pairs fowls,	42 00
3 horses,	815 00
Plants, 4 cs.,	222 75
Seeds,	258 54
Hand Carts, 5,	113 00
Carriage, Buggies and Harness,	2,131 00
Yokes,	95 29
Wood, 152 cords,	884 75
Brick, 181 m.,	1,659 14
Cement, 409 bbls.,	661 75
House Frames,	1,480 00
Timbers, 128 m. ft.,	3,669 09
Boards, 710 m.,	25,454 03
Plank, 218 m.,	7,006 18
Shingles, 1300 m.,	7,796 47
Clapboards, 74 m.,	3,161 96
Joist, 56 m.,	930 08
Pickets, 39 m.,	609 27
Scantling, 36 m.,	1,421 60
Lath, 1016 m.,	1,075 33

Submitting the above, imperfect and unsatisfactory as it is, of which you may make such use as you see fit.

I remain yours, &c.,

W. GOODALE.

PATENT SALTING MACHINE.

[CORRESPONDENCE.]

By R. C. Wyllie.

Rosebank, 7th June, 1854.

To the Hon. Wm. L. Lee, the King's Chancellor and Chief Justice, President of the R. H. A. S. &c., &c. :—

Sir :—In my letter to you of 1st June, 1853, published at page 152, No. 2, vol. 1, of the Transactions of the Society, I referred to the demand for salted meats that existed in Peru. Of late, there has been a considerable demand in our own port of Honolulu. That demand is likely to increase, both for the supply of steamers and the vessels under belligerent flags, that may seek refuge in our *neutral* ports. I understand, in many parts of the islands, cattle are multiplying both beyond the local demand and the capabilities of the soil to sustain them, while to convey them safely and opportunely to the sea-ports, is extremely difficult.

For all these reasons it may be important to make known, that I have written to obtain information respecting a patent machine for salting large quantities of flesh-meat, of all kinds, in a few minutes ; and that I expect a reply by every mail. To this letter I append a copy of my despatch of 7th October last, on that subject, to Archibald Barclay, Esq , the King's Commissioner in London. When I receive an answer I shall make it known to you.

Foreign Office,
Honolulu, 7th Oct., 1853.

To Archibald Barclay, Esq., H. H. M. Commissioner, &c., London :—

Sir :—On the 7th January, 1848, I wrote to you a private letter, (see my Wedgewood written letters,) enclosing another of same date for my good friend Dr. John R. Elmore, with a request that if the latter could vouch for the success of the salting machines, of which he was Patentee, you should send out to me two of such machines, each capable of salting three barrels of beef at once, or of the largest working size.

I intended one of these machines for my friend Monsieur Dudoit,

then Consul of France, and the other for my late friend William French, Esq.

Neither you nor Dr. Elmore ever replied to those letters. Perhaps, in the hurry of business, you may have overlooked them. If so, you will oblige me by forwarding to Dr. Elmore my said letter of the 7th January, 1848, that he may furnish me with the information then required for the advantage of Hawaiian agriculturists, with the prices of the machines of different capacities. But you and he are not to understand this letter as an authority to send out the two machines which I ordered nearly six years ago, without further hearing from me.

About the same time or before, Messrs. Pelly & Allen received a machine of that kind, which is in the hands of Mr. Dudoit. It has suffered much from neglect, and the description for working it has been lost. You will much oblige me by looking back in the books of the company to ascertain the precise description of the machine sent out, (whether Dr. Elmore's Patent or any other) and by sending to me, in duplicate, the description and directions for use that may correspond to it.

CORRESPONDENCE ON THE SUBJECT OF GUANO.

By. R. C. Wyllie.

Rosebank, 8th June, 1854.

To the Hon. W. L. Lee, the King's Chancellor and Chief Justice, President of the R. H. A. S., &c., &c.

Sir :—Referring to your address as President of the Royal Hawaiian Agricultural Society, at its meeting of 1853, at page 8, No. 4, of volume 1st of the transactions of the society, where you had the courtesy to advert to communications upon the subject of guano and tobacco, received by me, from Thomas Eldridge, Esq., the king's *Charge d'Affaires* at Lima, and to my letters to you of 1st June, 1853, printed at page 152 of the same, No. 2, I consider it of importance now to state to you that, having received further letters from Mr. Eldridge upon the same subjects, I wrote to him on the 1st August last, the reply of which I annex, marked No. 1.

I add also copy of my letter of 28 July, 1853, to Dr. R. W. Wood, containing three questions on the subject of guano, to which I respect-

fully solicit replies from those planters whose estates may require renovation by manure. It is marked No. 2.

My view is, and has ever been, that if we expect to compete successfully in the markets of California and Oregon, with other countries producing like products with ourselves, we must place ourselves on an equality with such countries, in the essential respects of capital, labor and improved cultivation, by importing the best seeds and plants, the best breeds of cattle, the best manures and the most improved machinery, to abridge and expedite labor. In proximity to markets, nature, and the extension of the United States to the borders of this ocean, have given us a positive advantage, and it is my belief that we can import all the labor we are likely to require from China, and use it in this kingdom at a cheaper rate than if we imported slaves either from Africa or the United States.

I am not sure that German labor would not be the best and cheapest that we could introduce into these islands. Upon that point and the necessity of encouraging the introduction of capital, and pursuing the most liberal policy towards all agricultural enterprises, I have not changed the views which I urged upon the king's government on the 1st of December, 1847. It is not improbable that I may not long hence, be in a position where I could promote the introduction of German, or any other desirable European laborers; and with the object of having those views of mine, and especially, my calculations corrected, when erroneous, I respectfully enclose, marked No. 3, the appendix to my report as Minister of Foreign Relations, requesting your attention to enclosure No. 80, in that appendix, which contains those views. I hope that I need not assure you, that although my presence in this kingdom may soon cease forever, the interest which I take in its prosperity, the physical and moral improvement of the native race, and in their preservation, will never cease.

But our greatest want is capital; and I see no other way of remedying that want, except through a well regulated bank, with, *chiefly*, a metallic currency.

[NO. 1.]

HONOLULU, 1st August, 1853.

To Thomas R. Eldridge, Esq., H. H. M.'s Charge d'Affairs, Lima :

MY DEAR SIR :—In reply to your unofficial letters of the 17th May and 23d June, and to valuable suggestions previously made by you, the benefit that might accrue to the agriculture of these islands from the use of *Guano* as an article of Manure, I enclose for your information the following documents, viz:

Copy of my letter of the 28th ult. to Dr. R. W. Wood, who is one of our largest and most experienced planters, both on Kauai and Maui.

Copy of Dr. Wood's reply of the 31st July.

Copy of Memorandum of sales of *Guano* ex "*Harpooner*," made by Messrs. R. C. Janion & Co.

The first 83 pages of the Transactions of the R. H. Ag'l. Society, shewing at page 8th that I brought the subject of Guano before the Society, through its enlightened and patriotic President, the Hon. W. L. Lee.

By a careful perusal of all these documents, you will arrive at the conclusion that at present, no well founded encouragement can be held out to any one to risk his money in speculations of *Guano* in this Kingdom. But if you will look at our miserable exports of all descriptions of native produce, as given by the Committee on statistics, at page 85, where they put down $222,651, as the total average value, for the years 1849-1850 and 1851, and $129,513 as the total value for 1852; and if you will compare that wretched production of our whole Islands containing about 3,897,600 square acres, with the production and extent of the Islands of Mauritius, Bourbon, Barbadoes, Tobago, or Puerto Rico, you will perceive clearly that so far as developing the agricultural wealth of the islands, we have yet to make a beginning. When we do commence in right good earnest, demand for Guano must necessarily arise.

In regard to Tobacco, I refer you to my letter to Mr. Archer of the 28th July last ; copy of which I enclose. When I receive the samples asked for I shall send them to you, but I fear on trial that the

quality will, as yet, not equal that of your best "*Jaen de Bracamoras*" or "*Guayaquil.*" I remain my Dear Sir

Yours very truly,

Signed, R. C. WYLLIE.

To THOMAS R. ELDRIGE Esq.,
H. H. M.'s Charge d'Affaires.

[NO. 2.]

ROSEBANK 28th July, 1853.

MY DEAR SIR:—By the British Schooner "*Denia,*" which arrived from Callao in 1844, I received some bags of *Guano* from Messrs. Gills, Crawley & Co., of Lima, who were anxious to know if the islands would consume such a quantity as to make it worth their while to import it. I distributed it among those whom I thought most likely to give it a fair trial, but I could never obtain a report on it.

Subsequently I have had several letters from a highly respectable friend of mine residing in Lima, who promises to procure a contract for all the Guano that these islands can consume, provided they would afford an adequate market, at a remunerating price.

Looking upon you as one of the most extensive Planters in this Kingdom, I consider that you are the best able to give me a sound opinion upon the following points, viz:

1. What quantity of Guano would all the Islands consume yearly?
2. What price could be expected per cwt of 112 lbs, or per ton?
3. Could payment in cash be depended upon?

That the use of Guano would vastly increase the produce of the islands, per acre, I cannot doubt, without disbelieving the accounts of its astonishing effects in the West Indies, the Mauritius and other inter-tropical islands. I presume you are well acquainted with these accounts, and with the manner in which Guano is used as a manure. I believe that it has been found, everywhere, that its use so much increases the quantity as more than reimburse the Planter for its cost.

You will greatly oblige me by giving me your views upon the several points, in writing, at your earliest convenience.

I remain my Dear Sir, Yours truly,

Signed, R. C. WYLLIE.

To DR. R. W. WOOD.

P. S. I ought to have mentioned that Messrs. Sevilla & Co., of Lima, have a contract for the supply of Guano to India, the islands in the Eastern Seas, and to China, and that if the Phillippines and Java increase and cheapen their sugars &c., by its use, the result will be to proportionally augment the difficulty of these islands in competing with them. Upon our ability to compete depends our prosperity as a nation. Signed, R. C. W.

COMMUNICATION ON THE SUBJECT OF A SAVINGS BANK.

By R. C. Wyllie.

Rosebank, 19th June, 1854.

To the Hon. Wm. L. Lee, the King's Chancellor, Chief Justice President of the R. H. A. S. &c. &c.

Sir:—Immediately after the King's recommendation of a Savings Bank, in His speech from the Throne to the Legislature of 1850, I wrote to London for a Form in which the multifarious and complicated accounts of such Institutions are kept in England. I have the honor to inform you that that Form exists in my possession and will be forthcoming, for the public good, whenever such an Institution is solidly started.

To your clear understanding it must be apparent that nothing would more conduce to the introduction of habits of frugality and industry, among the natives, and the eradication of indolence with its concomitant sensuality than a well regulated Savings Bank. It would powerfully promote the development of the agricultural resources of the islands, by the creation and accumulation of the means indispensable to the proper cultivation of the lands possessed by the natives—that cultivation would inure them to the habitual exercise of their physical powers—this would beget health—health would add its blessings of longevity and offspring, and the Hawaiian race, to whose welfare we are alike devoted, would be saved from the utter extinction to which as things have been, and still are, very much to our regret, they are fast approaching.

Knowing well that you are not indifferent to this deplorable result, but on the contrary, that you ever have been, and are disposed to do all

that man can do to preserve, in being, and promote the welfare of the Hawaiian Kingdom and people, and wishing, however humbly, to co-operate with you therein, wherever destiny may place me,

With the highest respect, I have the honor to be, sir,

Your most obedient and faithful servant.

REPORT OF THE VICE PRESIDENT OF MOLOKAI.—[1854.]

Molokai is a small place and has scarcely a name among agriculturalists. The peculiarity of its shape, long, narrow, and with a mountain ridge traversing its length, makes the face of the country unfit for extended cultivation. It has but two places of table land, so beautiful for ploughing at these islands, and those two are cut up by deep ravines. Besides these, a few of the valleys on the south, expand out into level land along the sea shore. All these places are fertile, and fine for planting, but fit for miniature farms only, instead of plantations. Natives cultivating patches of from half an acre, to two or three, can live and prosper here. The unpromising nature of the country, has thus far, kept at a distance all other than native agriculturalists. No foreign capitalists of any kind are on Molokai. Neither sugar nor coffee is grown there. One only flock of sheep is grazing on one of those table lands.

But there is evident forehandedness in a native way among natives there. The children are becoming used to work, and for natives shew much enterprise and industry. In every village the children are the hired laborers, the boys having formed themselves into clubs for working together and doing jobs offering a profit.

Property among the natives of Molokai is very equally distributed. Very few are distressingly poor, and none are rich. They have but little litigation and quarreling, have no lawyers, and therefore at liberty to devote themselves to the acts and labors of peace. Almost every man and boy has a house and one or two cattle, the latter of which are used effectually as beasts of burden. There being no foreign examples among them, not a native owns an ox or horse cart on the island.

I have, after ploughing myself ten or twelve acres before them, induced three men to buy a plough and harness each, which are the only ones on the island.

The principle productions of Molokai are kalo, sweet potatoes, melons, and squashes. A surplus of each sold at Lahaina and Honolulu, giving the laborers an income.

They get something from selling pigs, also, and lately many have begun to make butter, which is very good considering their inconveniences for making.

Hat braiding is another branch of native industry, quite common among Molokai women. Any man with a nest of hats in the streets of Lahaina or Honolulu, is known to be from Molokai.

In one district some hundred dollars worth of salt has been manufactured within the past two years, the sale of which has been so ready that more attention will probably be paid to its manufacture hereafter.

Since Indian corn has been called for by its present prices, its culture has been entered upon by the natives at Kalae with some spirit. A larger quantity of it will be raised there hereafter. Wheat culture is possible on our table lands. I ploughed and sowed ten acres, but wishing to make my seed suffice for myself, and to scatter also among natives, I sowed parts of it too thin and the worms have destroyed, in toto, the half that I sowed. The remainder looks promising. But my seed saved by sparse sowing and given to the natives to experiment upon, turned out to be a vexation, for I lost it, as well as the ploughing the ground where it ought to have been sowed. The natives thought they would see first whether it was good, and thus boiled and ate it all.

Respectfully Submitted,

C. B. ANDREWS.

STANDING COMMITTEES FOR 1855.

1. On SUGAR.—W. H Rice, R. W. Wood, L. L. Torbert, S. Reynolds, Alex. E. McGregor.
2. On COFFEE.—T. C. B. Rooke, B. Pitman, G. Rhodes, P Cummings, B F. Snow, H. A. Neilson
3. On WHEAT and OATS.—H M. Whitney, J. T. Gower, H. J. G. Croswell, E. Miner, A. G. Thurston, G. E. Beckworth, C. B. Andrews.
4. On INDIAN CORN.—J. S. Emerson, T. Metcalf, Wm. Reynolds, W. Chamberlain, S. G. Dwight.
5. On HORTICULTURE.—G. Rhodes, E. Bailey, E. P. Bond, J. Montgomery, E. Perrin, A. B. Bates, J. W. Austin,
6. On The VINE.—James Makee, Wm. Ap Jones, G. Reiners, J. Montgomery, H. Stangenwald, F. A. Oudinot.
7. On FRUIT and FRUIT TREES.—T. Coan, G. D Gower, Alex. Adams, P. Cummings, W. P. Alexander.
8. On TREES for SHADE, TIMBER, WOOD, &c.—C. R. Bishop, G. P. Judd, B. Pitman, B. F. Snow, W. H. Johnson.
9. On GARDEN and other SEEDS —J. Montgomery, H. M. Whitney, W. Hillebrand, Eugene Bal, Paul F. Manini.
10. On TARO and GARDEN VEGETABLES.—A. B. Bates, James Makee, Z. Kaauwai, A. Adams, Wm. Ap Jones.
11. On FLORICULTURE.—W. Hillebrand, G. Rhodes, E. G. Beckwith, G. H. Luce, John Ladd, D. P. Penhallow.
12. On IRISH POTATOES.—L. L. Torbert, John Richardson, Elias Bond, S. Hoffmeyer, G. D. Gilman, P. Nahaolelua.
13. On SWEET POTATOES.—T. C. B. Rooke, G. L. Kapeau, Lilikalani, John Ii, Kaahalama.
14. On ONIONS.—B. Pitman, G. D. Gilman, C. B. Andrews, L. L. Torbert, J. Piikoi, H. A. Widdemann.
15. On ARROW ROOT and its MANUFACTURE.—Wm. Reynolds, G. Gilmore, T. Coan, W. A. Aldrich, S. M. Kamakau.
16. On NEAT CATTLE.—T. Cummins, J. Meek, R. Moffat, E. H. Allen, R. W. Holt, J. Dudoit, L. H. Anthon.
17. On HORSES.—Liholiho, S. P. Ford, G. P. Judd, F. P. Manini, J. O. Dominis, J. L. Brenchley, J. I. Dowsett.
18. On SHEEP.—S. P. Ford, T. Cummins, Wm. Webster, R. Moffat, J. I. Dowsett, G. M. Robertson.
19. On SWINE.—J. Meek, J. Montgomery, C. B. Andrews, A. Paki, G. Gilmore, R. Moffat.

20. On POULTRY.—Wm. Ladd, H. M. Whitney, S. C. Damon, W. Ap. Jones, John Janion, V. Chancerel.
21. On BIRDS, BEES, INSECTS and WORMS.—J. W. Marsh, P. J. Gulick, W. Newcomb, E. P. Bond, J. S. Green.
22. On BUTTER and CHEESE.—C. B. Andrews, O. H. Gulick, H. A. Widemann, H. Robinson, A. Bishop.
23. On TOBACCO.—A. Fornander, A. Archer, L. Kamehameha, W. B. Rice, J. Ritson. J. R. Opitz.
24. *On SEASONS.—J. T. Gower, T. C. B. Rooke, J. S. Emerson, Wm. Ladd, Edw. Johnson, J. Mott Smith,
25. On FENCES.—C. W. Vincent, L. L. Torbert, W. H. Pease, G. Rhodes, S. Reynolds, B. F. Hardy.
26. On OLONA, or NATIVE HEMP.—S. Reynolds, Z. Kaauwai, Lilikalani, J. W. C. Maikai, S. W. Kamakau, J. S. Rives.
27. On MANUFACTURES.—E. H. Allen, J. Hardy, R. A. S. Wood, J. H. Wood, D. W. Weston, G. D. Gower, H. Dimond.
28. On MACHINERY and AGRICULTURAL IMPLEMENTS.—S. N. Castle, Wm. Lighthall, R. W. Wood, D. W. Weston, J. S. Green, J. H. Wood.
29. On AGRICULTURAL and COMMERCIAL STATISTICS.—W. Goodale, B. W. Field, B. Pitman, C. S. Bartow, H Rhodes, W. L. Green, A. S. Cook.
30. On ROADS and INTER-ISLAND NAVIGATION.—R. H. Bowlin, W. Webster, James Makee, H. A. Widemann, P. H. Treadway, T. Metcalf.
31. On LABOR and the POPULATION of the ISLANDS.—W. Hillebrand, R. Armstrong, C. G. Hopkins, W. H. Rice, G. M. Robertson,
32. On SALT.—C. W. Vincent, R. Clouston, S. G. Dwight. R. Coady, W. Newcomb, J. C. Pfluger, F. L. Hanks.
33. On SOILS.—Wm. Webster, W. H. Pease, J. Fuller, E. Bailey, H. J. G. Croswell.
34. To RECEIVE AND ARRANGE ARTICLES FOR THE FAIR OF 1855.—W. C. Parke, J. H. Brown, B. W. Field, H. Rhodes, W. H. Snodgrass, John Ladd, T. Spencer, M. C. Monsarrat, W. F. Allen, H. McFarlane, J. Bartlett, J. R. Pratt.

LIST OF PREMIUMS,

FOR THE ANNUAL SHOW AND FAIR TO BE HELD AT HONOLULU, ON WEDNESDAY, THE 13th OF JUNE, 1854.

CATTLE.

Class I.—Imported Stock.

1 Best Imported Ayrshire Bull, $20 or Silver Cup.
2 " Ayrshire Heifer or Cow, $10 or "
3 " Devon Bull, $20 or Silver plate.
4 " Devon Heifer or Cow, $10 or Silver plate.
5 " Short horn Durham Bull, $20 or Silver Cup.
6 " " " Heifer or Cow, $10 or Silver Cup.
7 " Hereford Bull, $20 or Silver Plate.
8 " " Heifer or Cow, $10 or Silver Plate.

Class II.—Native crossed between Imported and Native Cattle.

9 Best Bull, $10 or Silver Cup.
10 " Cow, $10 or "
11 " one year old Bull, Diploma.
12 " " Heifer, "
13 " yoke of Working Oxen over 4 years old, $5 or Large Medal.
14 " Milch Cow, $10 or Silver Cup.

The cow to be kept on grass only.

The time of trial from 1st of May to 1st June.

Statement to be furnished containing, 1st. The age and breed o the cow and time of calving. 2d. The quantity of milk in weight and also of butter during the trial. 3d. At least 10 lbs. of the butter, and the statement to be verified by affidavit of competitor and other persons conversant with the facts.

15 Best fat Ox over 4 years old, $5 or Medal.
16 " fat cow " " " "
17 " fat Steer under 4 " "

Applicants for premiums on fat cattle must furnish particular statements of the manner of feeding, and kind, quantity and cost of food, and all the expenses of fattening, if they are other than grass fed.

HORSES.

Class I.—Imported Horses.

18 Best blood Stallion over 4 years old, $20 or Silver Cup.
19 " " brood Mare, " " 10 "

20 Best Stallion, horse of all work, over 4 years old, $20 or Silver Plate.
21 " brood Mare, " " " $10 or Sil. Plate.
22 " Stallion, draught, over 4 years old, $20 or Silver Cup.
23 " brood Mare, draught, " " 10 "

Class II.—Native Horses.

24 Best Stallion over 3 years old $10 or Silver Cup.
25 " brood Mare with foal at her foot, over 3 years old, $10 or Silver Cup.
26 " Stallion over 2 years old, $5.
27 " Mare over 2 years old, Youatt on the Horse.

Colts.

28 Best 1 year old Stallion, $5 or Medal.
29 " " Mare, Youatt on the Horse.

Geldings.

30 Best Gelding, $5 or a Cup.
31 2d best " Youatt on the Horse.

SHEEP.

Class I.—Imported.

32 Best Merino Ram, $10 or a Cup.
33 " " Ewes, not less than two, Morrell's Shepherd.
34 " South Down Ram, $10 or a Cup.
35 " " Ewes, Morrell's Shepherd.
36 " Saxon Ram, $10 or a Cup.
37 " " Ewes, Morrel's Shepherd.

Class II.—Native and crossed between Imported and Native.

38 Best Native Ram, $5 or a Medal.
39 " " Ewes, Morrell's Shepherd.
40 " pen of Lambs, $5 or a Medal.
41 " sample of Wool not less than 3 fleeces, a Silver Medal.
42 " Shepherd's Dog, $10 or a Silver Dog Collar.
43 2d best " Morrell's Shepherd.
44 Best pair of Terriers, $10 or Silver Dog Collar.
Evidence to be furnished of the thorough training of the dogs, otherwise no premium can be awarded.

SWINE.

45 Best Boar, imported, $5 or a Medal.
46 " " native, " "
47 " breeding Sow, imported, $5 or a Medal.
48 " " native, " "
49 " lot of Pigs, not less than 5, under 10 months, $5 or Medal.

POULTRY.

50 Best lot of Poultry owned by exhibitor, (statement to be furnished and verified by affidavit) $5 or Silver Medal.

51 Best pair of Dorkings, Silver Medal.
52 " " Black Spanish, "
53 " lot of Malays, not less than 3—1 cock and 2 hens $3 or Book on Fowls
54 " lot of Shanghaes, 1 cock and 2 hens, $3 or Book on Fowls.
55 " " Bantams, " " " "
56 " " Turkeys, " " " "
57 " lot Muscovy Ducks, 1 drake and 2 ducks, $3 or Book on Fowls.
58 " lot small Ducks 1 drake and 2 ducks, $3 or Book on Fowls.
59 " lot of Geese, $3 or Book on Fowls.

Dairy.

60 Best lot (quality as well as quantity considered,) made from five cows in 30 consecutive days, 20 lbs. of the butter to be exhibited, $10 or Silver Cup. Butter to be exhibited in wooden or stoneware containers.
61 2d best, do. do., Silver Butter Knife.
62 Best 3 firkins butter, not less than 50 lbs. each, $10 or a Cup.
63 " sample of butter of not less than 20 lbs. in one container, $5 or a Medal.

A statement of the manner of making the butter must accompany each sample.

Cheese.

64 Best cheese, over10 lbs., $5 or a medal.
65 2d best, " Diploma.

Sugar and Syrup.

66 Best 100 lbs. Muscovado Sugar, an average sample of not less than 15 tons to be shown by certificate of the competitor and one other person conversant with the facts, $15 or a Silver Goblet.
67 2d best 100 lbs., do. do., $10 or a Silver Cup.
68 Best 100 lbs. made by any process, refined or otherwise, $5 or a Medal.
69 " 10 gallons of Syrup, a fair sample of 10 bbls. (to be shown by certificate) $10 or a Cup.

The process of manufacturing and clarifying must accompany the samples of Sugar and syrup offered.

Coffee.

70 Best 75 lbs. of Coffee, a fair sample of at least 2,000 lbs. $10 or a Silver Cup.
71 2d best 75 lbs. Coffee, do. do. $5 or a Silver Medal. For person who shall have planted the greatest number of Coffee Trees between the Annual Fairs of 1854 and 1855, $10 or a Silver Cup. Description of the location, the age and size of of the trees planted, and the distance between them.

Grain and Seeds.

72 Best sample of Wheat not less than half bushel $10 or Silver Cup.
73 " 20 ears Indian Corn, $5 or Medal.
74 " bushel of " " "
75 " sample of Oats, not less than half a bushel, $5 or Medal.
76 " " Barley, " " "
77 " " White beans, not less than 1 peck, "
78 Greatest and best variety of Beans, of not less than 2 quarts each, $5 or a Medal.
79 " sample newly introduced grain, valuable to the farmer, not less than one bushel, Silver Medal.
80 " variety of Garden Seeds, raised on the islands, Silver Medal.

Field Crops.

81 Best crop of Wheat, not less than 2 acres, nor less than 25 bushels per acre, $15 or a Cup.
82 " crop of Indian Corn, not less than 2 acres nor less than 25 bushels per acre, $10 or a Silver Cup.
83 " crop of Barley, not less than 2 acres, nor less than 25 bushels per acre, $5 or a Medal.
84 " crop of Oats, not less than 2 acres, nor less than 25 bushels per acre, $5 or a Medal.
85 " crop of White Beans, not less than half an acre, $5 or a Medal.
86 " crop of Irish Potatoes, not less than 2 acres, $10 or a Cup.
87 " half acre Tobacco, with account of cultivation, " "
88 " 100 Cigars, a specimen of 10,000, $10 or a Cup.
89 " half acre Broom Corn, " "

Statements must be furnished by applicants for premiums on field crops: 1st. Previous crop, if any, and how manured. 2d. The quantity of manure on the crop, the manner of its application, the quantity and kind of seed used. 3d. A detailed account of the expense of cultivation. 4th. A sample of the product must be presented at the exhibition. 5th. The land must be measured and the Surveyor make an affidavit to his survey.

Vegetables.

90 Best and greatest variety of Vegetables, raised by the exhibitor, $10 or a Cup.
91 do. imported Sweet Potatoes, Bermuda or Carolina $5 or a Silver Medal.

92	do.	10 heads of Kalo, - -	$5 or a Silver Medal.
93	2d	do. do - -	$3 or a Book.
94	Best	12 stalks of Celery, - - -	3 do.
95	do.	12 heads of Cauliflower, - -	3 do.
96	do.	12 white table Turnips, - -	3 do.
97	do.	12 Carrots, - - - -	3 do.
98	do.	6 table Beets, - - -	3 do.
99	do.	12 Radishes, - - - -	3 do.

100	Best 12 Parsnips,	$3	or a Book.
101	do. 6 heads of Cabbage,	3	do.
102	do. 5 do. Lettuce,	3	do.
103	do. 15 Tomatoes,	3	do.
104	do. bunch double Parsely,	3	do.
105	do. 2 purple Egg plants,	3	do.
106	do. 12 Onions, (seedlings,)	3	do.
107	do. 3 Squashes,	3	do.
108	Largest Squash or Pumpkin,	3	do.
109	Best bushel of Irish Potatoes,	3	do.
110	Greatest variety of Irish Potatoes, at least half dozen of each kind to be shown, with account of peculiarities, and opinion as to the best kind or kinds,	$3	or a Book.
111	Best bushel of Sweet Potatoes,	3	do.
112	Greatest variety of Sweet Potatoes, at least half dozen of each kind to be shown with account of peculiarities, and opinion as to the best kind or kinds,	$3	or a Book.

Discretionary premiums will be awarded on choice garden products not above enumerated.

FRUIT.

113	Best 12 Peaches,	$5	or a Medal.
114	2d 12 do.	$3	or a Book.
115	Best dish of Grapes,	5	do.
116	2d do. do.	3	do.
117	Best dish of Raisins,	3	do.
118	Best 12 Turkey Figs,	3	do.
119	do. 12 of any other variety,	3	do.
120	do. collection of Water Melons, not less than 5,	3	do.
121	do. specimen of any variety,	3	do.
122	do. collection of Mush Melons,	3	do.
123	do. specimen of any variety,	3	do.
124	do. 12 Oranges,	3	do.
125	do. 6 Lemons,		Silver Medal.
126	do. bunch Bananas,	3	do.
127	2d do. do.	2	do.
128	Best 6 Mangoes, Downing's Fruit Culture.		

Volumes of Downing's and Thomas' Fruit Culture will be awarded by the Judges in their discretion, for choice fruits not enumerated.

The fruit and vegetables exhibited for which premiums are awarded are to be at the disposal of the Society.

No person can receive but a single premium on the same fruit.

Any premiums may be withheld in the discretion of the Judges, if the samples exhibited are not worthy of a premium.

For the person who shall plant and successfully start the greatest

number of Orange, Peach, Lemon or Mango Trees, or Grape Vines, between the Annual Fairs of 1854 and 1855, a Volume of Downing's Fruit Culture or $3.

FLOWERS.

129	Best collection and greatest variety of flowers,	$10 or a Cup.
130	2d do. do. do. do.	a Medal.
131	Best Floral Design, - - -	Pair of Vases.
132	do. Boquet, - - - -	Silver Boquet Holder.
133	For the most beautifully arranged basket of flowers, - - - -	do. do.
134	Greatest variety of Roses. - -	do. do.

FARM IMPLEMENTS, ETC.

135	Best Harrow, domestic manufucture,		$6	or a Silver Medal.
136	do. Cultivator,	do. do.	5	do.
137	do. Ox Cart,	do. do.	5	do.
138	do. Ox Yoke,	do. do.	5	do.
139	do. Churn,	do. do.	5	do.
140	do. doz. Brooms,	do. do.	5	do.

DOMESTIC MANUFACTURES.

Articles exhibited to be the manufacture of the 12 months preceding the exhibition.

141	Best machine for cleaning Coffee,		$10 or a Cup.
142	do. 10 yards Woolen Flannel or woolen cloth of any kind,		a Silver Medal.
143	do. 3 straw or grass Hats of native manufacture,		$5 or Medal.
144	do. 3 Door Mats,	do. do. 3	do.
145	do. 3 Table, Floor or sleeping Mats,	do. 5	do.
146	do. pair of cotton knit stockings,	-	$5 or Diploma.
147	do. Linen Bosom Shirt, - - -	2	do.
148	do. Ornamental Needle Work, - - -		- do.
149	do. Ottoman Cover, - - - -		do.
150	do. Worked Cushion and Back, - - -		- do.
151	do. Variety of Worsted work, - - -		do.
152	do. Worked Collar and Handkerchief, - -		- do.
153	do. 2 Lamp Stand Mats, - - - -		do.
154	do. Ornamental Shell or Wax Work, - -		- do.
155	Best and most beautiful Lamp Shade, - -		do.
156	do. Bed Quilt, - - - - - -		- do.
157	For the best barrel Salted Beef, - - -		$5.

Discretionary premiums will be awarded for articles not included in the above list.

Medals will also be awarded for articles of mechanical ingenuity, and machinery deemed useful.

In presenting the premium list for the exhibition in 1855, the Board of Managers would call the attention of the public to the numerous additions which have been made to the list of premiums, and which call for a large expenditure. Such changes and additions have been

made as the experience of former years has suggested as important, and they trust such as will meet the approbation of exhibitors.

Requirements from Competitors.

All exhibitors, except ladies, and natives who are members of auxiliary societies, paying their subscription fees into the parent Society, must become members of the society, in order to take a premium, and must have their articles and animals *entered on the Secretary's Books, not later than* Tuesday, June 12th 1855.

All articles for exhibition must be delivered to the Committees appointed for the reception and arrangement of articles as early as Wednesday morning, 9 o'clock, A. M., except flowers, which will be received until 10 A. M.

Horses and all other animals must be brought to the ground as early as 10 ½, A. M.

Persons intending to exhibit are specially requested to forward their entries to the Secretary at the earliest date possible, as it will greatly facilitate the business of the show and the making of the preliminary arrangements necessary thereto.

Articles or animals removed from the ground before the close of the exhibition, (except by permission of the President) cannot receive a premium though awarded.

Articles and animals will be numbered as they are received, and not labeled as heretofore, and prize cards or flags will be attached to the successful articles or animals immediately after the decision of the Judges.

Instructions for the Judges and Superintendents.

The Judges will meet on the grounds precisely at 11 o'clock, on Wednesday, receive the list of entries, and then proceed to decide upon the merits of the different articles and animals submitted to them, reference being made to the numbers affixed to each.

A Superintendent will attend each set of Judges, point out the different articles and animals to be examined, and attach prize cards or flags to the successful articles and animals.

The Judges will report not only the animals entitled to premiums, but also those *next in merit* in each class, to meet the contingency of any objection that may be made to the awards. They will also report any animals which in their opinion deserve special commendation.

In all articles on exhibition where competition is not made, the Judges *shall withhold premiums*, unless the article is of such superior merit as to be entitled to the award.

In all cases the *Diploma* of the Society is to be awarded only *as evidence of* superior merit.

Animals, implements and articles which have heretofore received the first premium of the Society may be allowed to compete, and if adjudged superior to any other on exhibition, will be awarded the *Certificate* of the Society to that effect, or the Diploma of the Society, at the option of the exhibitor.

NAMES

OF THE MEMBERS OF THE

ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

LIFE MEMBERS.

HIS MAJESTY, KAMEHAMEHA IV.

Booth, Joseph
Cummins, Thos.
Hubertson, Geo. Fred.
Janion, Rob't C.
Kamehameha, H. H. Prince Lot
Kenway, Geo. S.
Lee, Wm. L., H. H. M.'s Chief Justice.
Makee, Jas.
Marshall, Jas. F. B.
Meek, John
Miller, Wm., H. B. M.'s Consul General.
Montgomery, John
Peirce, Henry A.
Pitman, Benj., Vice Consul for Bremen.
Wood, R. W.
Wyllie, R. C., H. H. M.'s Min of Foreign Relations.

ANNUAL MEMBERS.

Adams, A. Sen.
Adams, D.
Aldrich, W. A.
Alexander, W. P.
Allen, E. H., H. H. M.'s Min. of Finance.
Allen, William
Andrews, C. B.
Andrews, L., sen. H. H. M.'s Judge of Probate,
Andrews, L. Jr,
Angell, B. F.
Archer, A.
Armstrong, R., H. H. M.'s Min. of Public Instruction,
Armstrong, R. B.
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Anthon, J. A.
Anthon, L. H., Royal Danish Consul.
Bailey, Edward
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Baldwin, D.
Barnard, J. C.
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Bartow, C. S.
Bates, A. B., H. H. M.'s Law Adviser.
Beckly, William
Beckwith, G. E.
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Bishop, A.
Bishop, C. R.
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Bowlin, R. H.
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Brown, J. H.
Burdick, Jas. A.

Carter, H.
Cartwright, A. J. Jr.
Castle, S. N.
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Chancerel, V.
Chase, G. M.
Clark, E. W.
Clouston, Robert
Coady, Richard
Coan, Titus
Cooke, A. S.
Cooper, W. A.
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Cummings, P.
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Damon, S. C.
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Dudoit, Jules
Dwight, S. G.

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Field, B. W.
Fitch, H. T.
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Franconi, L.
Frick, D.
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Gilmore, Geo.
Goodale, W. Collector General.
Gower, G. D.
Gower, J. T.
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Green, W. L.
Griswold J. A.
Gulick, O. H.
Gulick, P. J.
Gregg, D. L., U. S. Commissioner.

Hackfeld, H. Consul for Sweden and Norway.
Hall, E. O., Director of the Gov. Press.
Hanks, Fred. L.
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Hardy, Jacob
Harris, C. C.
Hatcher, J.
Heuck, C. T.
Heeren, Ed.
Hillebrand, Wm.
Hoffmann, Ed.
Hoffmeyer, S.
Holdsworth, H. S. H.
Holt, R. W.
Hopkins, Chas. G.
Howland, H. S.
Humphries, Wm.

Ii, Jno., Associate Justice, Sup. Court.
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Irwin, J.

Janion, Jno.
Johnson, Ed.
Johnson, W. H.
Johnson, Samuel
Jones Wm. Ap
Judd, C. H.
Judd, G. P.

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Kamakau, S. M.
Kapeau, G. L.
Kaumaea, Z. P.
Kaauwai, D.
Kekaulahao, J.

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Ladd, William
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Landais, M.

Lathrop, G. A.
Lawrence, Robert
Lewers, C. H.
Lewis, Jno. G.
Luce, Geo. H.
Lunalilo, Wm.

McFarlane, H.
Maikai, J. W. E.
Makee, P. N.
Manini, F. P.
Manini, Paul
Marsh, J. W.
McLean, Geo.
McDuffie, A. J.
Metcalf, G.
Moffit, R.
Monsarrat, M. C.
Mossman, Thos. Sen.

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Newcomb, Wesley

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Paki, A.
Parke, W. C., Marshal Hawaiian Islands.
Paty, Jno.
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Spencer, Francis
Spencer, Steph.
Spencer, Thos.
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Sumner, Wm.
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Swinton, Henry
St. John, Henry

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Von Holt, H.

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Whittlesey, E.
Williams, Geo.
Williams, J. R.
Wonde, Wm.
Wood, J. H.
Wood, R. A. S.

Young, John, H. H. M.'s Min. of the Interior.

CORRESPONDING MEMBERS.

Bowring, John, L. L. D., H. B. M.'s Consul, Canton, China.
Bridge, Horatio, Purser U. S. Navy.
Dennison, Capt. Sir Wm., R. E. Lieut. Gov. Van Dieman's Land.
Dickson, Geo. Fred., London, England.
Ellsworth, Hon. Henry L., Indiana, U. S. A.
Emmons, Prof. Ebenezer, Albany, N. Y.
Ewbank, Hon, Thos., U. S. Commissioner of Patents, Washington D. C.
Grey, Sir Geo., Governor of New Zealand.
Henry, Joseph, L. L. D., Smithsonian Institute, Washington, D. C.
Hooper, Wm., San Francisco, Cal.
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Teschmaker, Jas. E., Boston, U. S. A.
Vattemare, Alex., Paris, France.
Velasquez, Don Jose Maria, Havana,

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TRANSACTIONS

OF THE

ROYAL HAWAIIAN

AGRICULTURAL SOCIETY:

AT ITS

FIFTH ANNUAL MEETING, JUNE, 1855.

VOL. 2. NO. 2.

HONOLULU, H. I.:
GOVERNMENT PRESS.
1855.

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1855.

LIST OF OFFICERS FOR 1855.

JAMES F. B. MARSHALL, *President.*

BENJ. PITMAN,	Hawaii,	*Vice Presidents.*
P. CUMINGS,	"	
L. L. TORBERT,	Maui,	
C. B. ANDREWS,	Molokai,	
R. W. WOOD,	Oahu,	
S. BURBANK,	Kauai,	

GEORGE WILLIAMS, *Treasurer.*

JOHN MONTGOMERY, *Corresponding Secretary.*

E. O. HALL, *Recording Secretary.*

S. N. CASTLE,	*Executive Committee.*
H. A. FAIRBANKS,	
A. B. BATES,	
C. R. BISHOP,	
B. F. SNOW,	

POLYNESIAN PRESS, HONOLULU, H. I.

ANNUAL MEETING
OF THE
R. H. AGRICULTURAL SOCIETY.

HONOLULU, June 12, 1855.

The Society met according to adjournment, at the Armory of the Hawaiian Guards, Mauna Kilika, the Court Room being occupied by the House of Nobles.

The President of the Society, Hon. W. L. Lee, being absent, it was unanimously voted that R. W. Wood, M. D., Vice President for Oahu, take the Chair, and preside over the Annual Meeting.

The reading of the minutes of the last session, was dispensed with, except the resolution of adjournment which was to the 2nd Tuesday in June 1855.

On taking the Chair, Dr. Wood read a brief Report of the proceedings of the Board of Managers, which was accepted.

The Treasuer read his Report which was accepted.

On motion of Mr. Marshall, it was voted that the Chair appoint a Committee of three to nominate Judges for the Fair to be held to-morrow. Messrs. Marshall, Castle and Robertson were appointed.

The Reports of Standing Committees were called for, and read.

A communication from Dr. Frick on the subject of Indigo was read, which elicited some discussion, and the announcement that Indigo was first introduced into the Islands by Dr. Serriere in 1827-8 from Batavia, and afterwards by Dr. Rooke in 1840 from Calcutta; this latter did not thrive. The former has spread over the Islands spontaneously, so as to be a nuisance in many places.

On motion of Rev. S. C. Damon,

Voted that Dr. Frick's communication be published in the transactions.

On motion of Mr. Bates,

Voted, that a Committee of three be appointed to enquire what measures can be adopted by this Society to ascertain whether the manufacture of Indigo is practicable at these Islands. Messrs. Rooke, Montgomery and Bates were chosen.

The Committee to nominate Judges for the Fair, reported a list which was accepted.

In view of the delay in receiving notice of appointments on Committees it was voted,

That the Corresponding Secretary notify the Chairman of each Standing Committee of his appointment as soon as made by the Board of Managers.

On motion of Mr. Castle,

Adjourned till ¼ to 8 this evening to hear the Annual Address at the Bethel.

Met at the Bethel pursuant to adjournment, where a large audience assembled. An eloquent address was delivered by Hon. G. M. Chase, U. S. Consul at Lahaina.

On motion of Hon. R. C. Wyllie, a vote of thanks was passed to Mr. Chase, with a request for a copy in the English and Hawaiian languages for publication in the transactions of the Society.

Adjourned to Tuesday morning at 12 o'clock, at the Arm

On Wednesday, the Fair took place as usual. The Exl [illegible] far short of former years, not so much in quality as in qu[illegible] variety. This was owing to several untoward circumstance[illegible]ng the principal of which were the absence of the President, who had generally taken the burden of the work on his own shoulders and the cessation, temporary it is to be hoped, of the steam comm[illegible]n between the Islands which rendered it difficult for Exhibitors [illegible]ither to come or send their products to Honolulu. At 8 o'clock the distribution of the prizes awarded at the Exhibition of the previous year, took place. The Goblets, Cups, Medals, Plate and Books were much admired and were superior to those of any previous year. After the prizes were distributed, the auction took place and went off with much spirit.

On Thursday, June 14th, the Society met at the Armory, pursuant to adjournment. The awards of Premiums at yesterday's Exhibition were read by the Committees.

The Society then proceeded to the choice of Officers for the ensuing year. The following were duly elected:

JAMES F. B. MARSHALL, *President.*
B. Pitman, Hawaii, *Vice President.*
P. Cumings, Hawaii, " "
L. L. Torbert, Maui, " "
C. B. Andrews, Molokai, " "
R. W. Wood, Oahu, " "
S. Burbank, Kauai, " "
George Williams, *Treasurer.*
John Montgomery, *Corresponding Secretary.*
E. O. Hall, *Recording Secretary.*
S. N. Castle, *Executive Committee.*
H. A. Fairbanks, " "
A. B Bates " "
C. R. Bishop, " "
B. F. Snow, " "

The following Resolutions were adopted:

Resolved, That whereas Hon. W. L. Lee, President of the R. H. A. Society, since its formation has especially merited our commendation and favor by his assiduity and success in sustaining the Institution by [illegible] influence and labor, as a testimonial of our appreciation ings o[illegible]s, the Board of Managers be directed to procure a suitable [illegible] be presented to Hon. W. L. Lee at the next Annual Mee[illegible]

Resolved, That the Board of Managers be requested to take into consideration, whether the interests of the Society would not be pro-m[illegible] importing Garden Seeds, and offering inducements to practical Gardeners to immigrate to the Islands, and if so, adopt some measures to accomplish that end.

Resolved, That the thanks of the Society be presented to Mr. J. H. Brown and the other members of the Committee of arrangements, for the Fair, for the efficient manner in which they have performed their duties

Resolved, That the thanks of the Society be presented to Dr. Wood, Vice President for Oahu, for the able manner in which he has presided at this meeting.

Resolved, That the thanks of the Society be presented to the Hawaiian Guards for the use of their Armory for the Society's meetings.

Resolved. That the thanks of the Society be presented to Rev. S. C. Damon for the use of the Bethel for the Annual Address.

Resolved, That Capt. Sterret, of U. S. S. Decatur, receive the thanks of the Society for the use of the awnings furnished by him for the Exhibition.

Resolved, That the Board of Managers be empowered to alter the time of the annual meeting, if in their judgment the interests of the Society will be promoted thereby.

On motion,

Voted, that this Society do now adjourn till the next Annual Meeting, the time for which shall be fixed by the Board of Managers.

REPORT OF THE PROCEEDINGS OF THE BOARD OF MANAGERS.

By R. W. Wood.

Gentlemen of the R. H. Agricultural Society:

By our constitution it is made the duty of the President of the Society to render a report of its proceedings for the current year, and to deliver, or cause to be delivered, an address at the annual meeting.

But in the absence of the President, the constitution makes no provision for the discharge of those duties by a substitute.

The Hon. W. L. Lee, who has continued to preside over the interests of the Society, since its organization in 1850, is now absent, on a mission to the United States, which, if successful, will be likely to give an impetus to Hawaiian Agriculture, equal to the desire of its warmest friends.

Owing to the ill health of the President, and the heavy pressure upon him, of his public duties, since the last annual meeting, the Board of Managers have been deprived of the usual amount of service of one of its most efficient members, who has been accustomed both to plan, as well as to execute nearly all the work, devolving

upon them. And in view of the comparatively small amount of business transacted in his absence, the other members of the Board have been deeply impressed with the extent of their indebtedness to his untiring exertions, for any advantages the Society, since its organization, may have derived from their action. Consequently, the task which they have assigned me of rendering to the Society an account of their proceedings, is comparatively an easy one.

Previously to the departure of Judge Lee, the Board of Managers were informed that he had been empowered to regotiate a treaty of reciprocity, between this government and that of the United States, on the basis of the reciprocity act, passed by the Hawaiian Legislature, on the 25th of May 1852, and believing that such a treaty would be mutually advantageous both to the agricultural and commercial interests of these Islands, and the neighboring states of Oregon and California, they held a meeting, at which a Committee was appointed to wait on the Hon. D. L. Gregg, Commissioner of the United States, to solicit his friendly coöperation.

The Committee were gratified to learn that Mr. Gregg, having had his attention called to the subject of their interview with him, by Mr. Wyllie, was prepared to make favorable representations, in presenting the proposed treaty to the attention of his Government.

In accordance with a Resolution of the Board, at a meeting held in November last, 158 prizes have been offered to be awarded at the approaching Fair, at a cost to the Society of about one thousand dollars.

The premiums awarded at the last Annual Exhibition, have, with one or two exceptions, been received, and are now ready for distribution; and for the improved designs, and superior mechanical execution of the cups and medals, as well as for the comparatively low cost at which they have been obtained, the Society is indebted to the services of J. F. B. Marshall, Esq.

At a meeting of the Board, held in June last to consider the subject of introducing improved foreign stock, it was ordered, that the Society take one half interest in a Devon Bull and Heifer, with the condition, that on their arrival at the Islands, they should be offered to the subscribers to the remaining half interest, at cost; and that in case of their refusal to accept them on these terms, they should be disposed of at public auction.

The cattle arrived in February last on the ship Vancouver, in good condition, and were the admiration of our best judges of stock. Their increase, on the passage, (that of a bull calf) nearly paid the expense of their transportation from Boston to Honolulu.

For the introduction of this desirable breed of cattle into the Islands, the Society is largely indebted to the disinterested services of B. P. Johnson of Albany N. Y., in selecting them, and also to Messrs H. A. Pierce, and C. Brewer of Boston, for their friendly interest and co-operation in forwarding them to the Islands. Notwithstanding their actual cost in Boston, $706, exceeded that at which they had here been estimated, by upwards of $400, the Soeiety has been reimbursed for its outlay, by the subscribing members, J. Montgomery Esq., and myself.

An increasing interest has been apparent, the past year, in the introduction of improved stock. And in reference to this subject, I beg to call the attention of the Society to the recommendation of the President, in his last Annual Report, that we appropriate a less um for premiums and a larger one for the importation of stock.

For information in respect to the individual experienc the year past, of farmers, planters and stock growers as well as to the present condition and prospects of the various agricultural interests of the Islands, which it has been the custom of the President to notice in his Annual Report, I beg to refer you to the Standing Committees who, it may be hoped, are fully prepared to report.

By a comparison of the present improved and extended cultivation and stock growing at these Islands, with that which existed prior to the organization of this Society, there is sufficient occasion for mutual congratulation, at the success which has apparently crowned its efforts.

In our experience of the past, there is not wanting encouragement for renewed exertions. In the present, there are reasonable grounds of hope for a brighter future.

REPORT OF TREASURER.

By George Williams.

Mr. President, and Gentlemen of R. H. Agricultural Society:

As Treasurer of your useful body, I have the pleasure to make known to you the continued prosperity of our finances. More than $800 have been paid for premiums, and $600 have been added to our invested funds, yet we have over $500 remaining on hand. Had all the subscribers paid their dues for the present year, our receipts would have been much greater; but many have allowed the year to slip by without doing so, although a majority, no doubt, feel an interest in the object of our organization. It is to be hoped that members will be more prompt the coming year and pay when called on. No life members have been added to our list during the present year.

In the month of January, I made a report of the receipts and disbursements to the Minister of the Interior, as provided by the Act of June 18th, and received from the Hawaiian Treasury the sum of $500.

With the amount of cash on hand, the sum to be received from the Government, the large amount of interest, fees of membership, ect., we shall certainly be able to pay all expenses and add $1000 to our investments.

The receipts and disbursements have been as follows:

RECEIPTS.

Cash on hand from last year,	$503 01	
8 Annual Members 4th year,	40 00	
Cash from Natives for exhibiting Steers,	1 00	
Cash received for extra cost of Premium,	2 50	
Nett proceeds of auction sale June 14th,	231 00	
Interest on Loans,	423 73	
Loans Returned,	1400 00	
Cash from Hawaiian Treasury,	500 00	
Cash for Society's interest in imported Stock,	356 44	
Cash received from 137 Annual Members,	685 00	
Sales of "Transactions,"	7 50	
		$4150 18

DISBURSEMENTS.

Cash paid for Premiums,	$437 75	
Bill of tin pans used at Fair,	7 25	
Posters 5,25, freight on Premium 8 79,	14 04	
Cash Premium,	15 00	
Binding Vol. I of "Transactions,"	18 75	
Cash paid for Premiums,	332 90	
Cash paid for Stock,	256 44	
Painting Flower-Stand,	3 00	
Certificate of Membership, to Auctioneers,	10 44	
Expense of Annual Meeting,	73 04	
Diplomas etc.,	13 00	
Cash for Carolina Potatoes for seed,	28 95	
Binding 250 copies "Transactions."	30 00	
Printing 500 do. do.	348 97	
Postage on "Transactions" to the United States,	11 60	
Loaned on Note and Mortgage 2 years, at 12 per cent,	2000 00	
Cash Premiums	20 00	
Balance on Hand,	529 49	
		$4150 18

Respectfully submitted.

LIST OF JUDGES CHOSEN TO AWARD PREMIUMS FOR THE FAIR 1855.

On Cattle.

M. C. Monsarrat, Thos. Cummings, John Rives, John Ii, G. P. Judd.

On Horses.

L. L. Torbert, G. Reiners, W. C. Lunalilo, E. Moll, L. H. Anthon.

On Sheep and Swine.

J. E. Barnard, J. Montgomery, G. W. Maxey, J. I. Dowsett, J. Dudoit.

On Poultry and Dairy.

P J. Gulick, W. P. Alexander, J. E. Chamberlain, H. M. Whitney, A. B. Bates.

On Sugar, Sykup and Coffee.

W. A. Aldrich, Ira Richardson, J. F. Colburn, W. Goodale, J. W. Austin.

ON GRAIN, FLOUR, SEEDS AND FIELD CROPS.

C. R. Bishop, R. Armstrong, L. Andrews, Jr, C. S. Bartow, W. Webster.

ON FLOWERS.

S. P. Ford, J. H. Wood, B. F. Snow, H. Stangenwald, D. L. Gregg.

ON FRUIT AND VEGETABLES.

C. G. Hopkins, L. Kamehameha, C. W. Vincent, W. H. Pease, H. Rhodes.

ON FARM IMPLEMENTS, AND DOMESTIC MANUFACTURES &c.

R. A. S. Wood, O. H. Gulick, C. Brewer, 2nd, Thos. Spencer, J. C. Spalding.

ON MISCELLANEOUS ARTICLES.

J. Fuller, J. Richardson, E. H. Allen, T. C. B. Rooke, D. M. Watson.

THURSDAY, June 14.

The Reports of the several Committees to award premiums were presented, and were as follows:—

REPORT OF THE COMMITTEE ON CATTLE.

BY M. C. MONSARRAT.

Mr. President, and Gentlemen of R. H. Agricultural Society:

No imported stock, Class I, or native crossed between imported and native cattle, Class II, were exhibited. (See list of premiums for the years 1854 and 1855.

The only animals on the ground were one fine yoke of working oxen, 7 and 8 years old; one fat ox, age not stated; one cow and heifer. All of native breed.

Your Committee, in the belief that Class II, was intended to embrace native stock, as well as that mixed with imported, are of opinion, that the animals exhibited are entitled to consideration; and trusting to the well known liberality of the Society, we award for the oxen, No. 123, $5 or a large medal.

For the fat ox No 125, $5 or a large medal.

REPORT OF THE COMMITTEE ON HORSES.

By L. L. Torbert.

Mr. President, and Gentlemen of the R. H. Agricultural Society:

Your Committee on horses report as follows:

Class I.—Imported Horses.

18. Best blood Stallion over 4 years old, Capt. Meek's "Oregon;" as he has carried off the first prize before, we award a certificate.

19. Best blood Mare over 7 years old, Mr. L. H. Anthon's "May Fly." (119.)

20. Stallion horse of all work, over 4 years old, none entered.

21. Best brood Mare of all work, over 4 years old, Capt. J. Meek's "Lady Eleanor," (113.)

22. Best Stallion, draught, over 4 years old, none entered.

23. Best brood Mare, draught, over 4 years old, Mr. Bullions' black Mare, (No. 95.)

Class 2.—Native Horses.

24. Best Stallion over 3 years old, Capt. J. Meek's "Young Oregon," 109.

25. Best brood Mare with foal at her foot, over 3 years old, Mr. J. G. Lewis' bay Mare, (97.)

26. Best Stallion over 2 years old, Capt. J. Meek's sorrel stallion, (111.)

27. Best Mare over two years old, Mr. Asher B. Bates' Mare (102.)

Colts.

28 & 29. none entered.

Geldings.

30. Best gelding, Mr. J. Dominis, (85.)

31. 2d. best gelding, Mr. W. S. Allen's, (87.)

It was hard to decide between those exhibited by Mr. Moffitt, and those to which we have given the premiums, and we think Mr. Moffitt entitled to a premium too.

We noticed an imported gelding belonging to Mr. L. H. Anthon, which is a noble animal and we recommend the same to your attention.

Mr Paul Manini entered a grey stallion 3 years old, sired by S.

Thompson's imported stud, which we recommend to your consideration; he being a fine and strong horse.

There was a native stallion belonging to Messrs. Brown which we did not notice until after the judges had separated, but which we think about as good as the best. This stallion is from "Oregon," and has many excellent qualities.

Some horses were brought to the fair after the time fixed for the entry, and so we could not take notice of them; we regret it the more as some of them were very valuable animals.

Respectfully submitted.

REPORT OF THE COMMITTEE ON SHEEP AND SWINE.

By Jno. Montgomery.

The Committee appointed to judge and report on Sheep and Swine, beg to report as follows:

We do not consider any of the sheep exhibited to be of sufficient merit or quality to enable us to award a prize.

In pigs the competition was very limited; only three being exhibited. The Black Berkshire Boar imported, No. 135, was a very fine specimen, and we consider him well entitled to the first prize.

Two native Sows, No. 165, were exhibited; and we consider them to be of good quality and entitled to the first prize.

For the Committee.

In addition to the above award, your Committee beg to add that a nunber of excellent fleeces of wool of superior quality were exhibited, and we award premiums to the following numbers, viz: 72, 73 and 74.

REPORT OF THE COMMITTEE ON GRAIN, FLOUR, SEEDS AND FIELD CROPS.

By W. Webster.

To the President and Members of the R. H. A. Society:

Gentlemen:—Your Committee on Grain, Flour, Seeds and Field

Crops, having examined the different samples of the above products exhibited, have awarded premiums to the following, as numbered at the exhibition:

Sample No. 44, best sample of Wheat, $10 or a silver cup.
" No. 76, " ' 20 ears Indian Corn, $5 or medal.
" No. 77, " bushel Indian Corn, $5, or medal.
" No. 106, " variety of Beans, $5 or medal.

No certificates or descriptions of the modes of culture, &c., as required by the Society, have been forwarded by the owners of the following samples, but your Committee would recommend premiums to be awarded as follows:

For sample No. 42, best crop of wheat, not less than two acres, $15 or a cup.

This sample your Committee are informed was raised by a native named Kekaha, a member of the auxiliary society on East Maui, at Makawao, and was from a field of 50 acres, producing about 23 bushels per acre. Although this falls two bushels per acre short, according to the Society's rule, still your Committee are of opinion that as a reward of industry and a stimulant to further exertion, the award will be beneficial.

Sample No. 67, best sample of Irish potatoes, $5 or medal.

This is the only sample of Irish potatoes exhibited, and is a fair one.

Sample No. 1, best sample of Tobacco, $10 or a cup.

This is a sample from the plantation of Messrs. Archer & Gruben, of Waimea, Kauai, and is from a field of 30 acres. There is no account of the cultivation of the crop along with the sample, but as one of the partners wrote an able report on the subject, as published in last year's transactions of the Society, your Committee consider that the above premiums ought to be awarded.

Your Committee would also recommend that a premium of $10 or a cup be awarded to the party, (if eligible,) who manufactured the excellent samples of wheat flour and Indian corn meal exhibited.

Two small samples of Hawaiian cigars were exhibited by Mr. Montgomery, put up in a neat and business-like manner, but not in a sufficient quantity to entitle them to a premium.

Your Committee regret to state that for many of the premiums offered by the Society there were no competitors, and that so far as this branch of the exhibition is concerned, it will not compare favorably with that of last year.

Respectfully submitted.

REPORT OF THE COMMITTEE ON SUGAR, SYRUP, AND COFFEE.

By J. W. Austin.

To the President of the Royal Hawaiian Agricultural Society:

The Committee appointed to award the premiums for the best samples of Sugar, Syrup and Coffee exhibited, would respectfully report as follows:

Sugar.

They award the first premium of $15 or a silver goblet, for the best one hundred pounds of Muscovado Sugar, exhibited in lot No. 50;—being a sample of twenty tons manufactured at Makawao, Island of Maui, during the present year.

The sample of sugar marked 51 was of good quality, and refined by means of animal charcoal imported from the United States; but the Committee were unable to award a premium for this sample, as the quantity required for a premium was not exhibited.

Coffee.

The Committee award the first premium of $10 or a silver cup for the lot marked 5, being a sample of the crop raised at Napoopoo, District of Kona, Hawaii, during the past year. This coffee was of fine quality and very aromatic.

The Committee were unable to award a premium for the lot marked 136, being a sample of coffee raised at Hanalei, Kauai, as the requisite quantity was not exhibited; but they would remark, that this coffee was of fine quality, well cleaned, and worthy of a premium, if the requisitions of the Society had been complied with.

Syrup.

There was no syrup exhibited for a premium.

Respectfully submitted.

REPORT OF THE COMMITTEE ON POULTRY, DAIRY AND CHEESE.

By A. B. Bates.

To the President of the Agricultural Society:

The Committee of judges on Poultry, Dairy and Cheese, respectfully report, that the show in this department, did no credit to the Society, though all the articles exhibited were excellent, without exception. It is known that there are several varieties of poultry upon the Islands in good condition and thriving, and it is to be regretted that sufficient interest has not been excited to induce the owners to have them at the fair. There was but one lot of hens and one lot of ducks for the Committee to examine.

Horace G. Crabb presented for our consideration one cock and two hens of the Shanghai Breed, which the Committee regard as entitled to a premium for their superior merit. The stock was procured from the American steamer Susquehanna on her way home from Japan, and the specimens of them produced here evidently were reared with great care. Mr. Crabb states to the Committee, the young hens are to a feather exactly alike, and also the young cocks; the fowls on exhibition will be five months old on the 16th June, inst., and that the largest of the pullets has laid 17 and the other 25 eggs. Before the exhibition closed another egg was found in the coop. The Committee are of opinion they should take the prize offered for "best lot of poultry owned by exhibitor," $5 or a silver medal.

A Japan hen exhibited by Miss Emma Smith attracted the attention of the Committee as a singular curiosity, being covered with feathers appearing like hair. It is doubtful whether the introduction of the stock is desirable.

There was but one lot of ducks on exhibition, and they belonged to Jas. I. Dowsett. They came of the Muscovy stock and are fine specimens. Two of them, one drake and one duck, were four months old; the drake is estimated to weigh 6 or 7 pounds. Another duck was accompanied with 24 ducklings of her hatching. The committee award to Jas. I. Dowsett the premium offered for best lot of Muscovy ducks, thinking it would have been difficult for him to have been beaten whatever may have been the competition.

There was but one specimen of butter exhibited, which was accom-

pa..ied with no statement of how it was produced It was of fair quality, but not superior to the butter frequently in market. It was not thoroughly worked, and had it been necessary for the Committee to ascertain its weight, a liberal allowance should have been made for the weight of the salt it contained more than necessary to preserve a fine specimen. Butter of the finest quality in color, taste and consistency may be made upon the Islands, for such specimens have been seen by some members of the Committee, bought in the market, and until they are produced at the Fair, the Committee think they will not be justified in awarding a premium.

Whether cheese of first quality can be produced upon the Islands may be problematical; but no specimen was found at the Fair meriting a special commendation, much less a premium.

The lady on Kauai who usually has a specimen at the Fair is entitled to praise for her perseverance, and it is to be hoped before another year has elapsed, fine specimens may be produced from the many herds upon the several Islands.

REPORT OF THE COMMITTEE ON FLOWERS.

By J. H. Wood, Acting Chairman.

Mr. President, and Gentlemen of the R. H. Agricultural Society:

Your Committee appointed to examine and award premiums on flowers exhibited to day having, in the absence of its chairman, attended to the duty assigned them according to the best of their ability, respectfully beg leave to submit the following report:

To those present at the exhibition we need not say the display of flowers was large and very beautiful; showing the introduction and successful cultivation of very many choice varieties since our last annual fair, —eliciting universal admiration, richly merited, and showing a greater improvement in this department than any other.

Your Committee award as follows:

For the best collection and greatest variety, first premium to No. 110.

For 2d " " " 2d " No. 138.

For 2d best Floral Design we award the premium to No. 53, as being the most skillfully executed; but would avail ourselves of the dis-

cretionary power to award premiums for articles of merit not enumerated, and award a premium for Floral Design No. 16, as exhibiting more originality of design than either of the others.

For the best Boquet, premium to No. 92.

For the greatest variety of roses, premium to No. 110.

There being no basket of flowers exhibited, your Committee can only regret being unable to award the premium offered for that purpose.

Your Committee are decidedly of opinion, and would suggest, that a larger number of premiums should be offered in this department—at least first and second premiums for each of the collections enumerated the present year; and would suggest the propriety of one or two premiums for the best Dahlias—likewise a premium for the introduction of the Nymphea, or white pond lilly.

While but one premium is offered, there is a feeling—and a legitimate one, too—among the humbler class of floral cultivators, that it is useless for them to attempt competition with amateur florists upon an extended scale,—the consequence is, competition is not induced, and the Society loses the gratification anticipated, and fails to promote the object designed.

Your Committee also believe the Society can well afford to offer an extended list of premiums in this department, when we consider the amount of sales from this source yearly.

Although professedly an agricultural society, we think its members and the community are fully aware of the importance and interest which flowers have ever contributed to our annual exhibitions, aside from the *daily* pleasure of living, riding, and walking among beautiful flower gardens, filling the air with their fragrance, delighting the eye with their delicate beauty, and raising the thoughts to the great Author.

Respectfully submitted.

REPORT OF THE COMMITTEE ON FARM IMPLEMENTS AND DOMESTIC MANUFACTURES.

By R. A. S. Wood.

To the President and Gentlemen of the Royal Hawaiian Agricultural Society:

The Committee appointed to judge of and award premiums on Farm Implements and Domestic Manufactures, beg to report that they have awarded as follows, viz:

No. 1. Best specimen of Ox Yoke to A. Philips; as they consider this specimen, (although not so highly finished as home manufacture,) to be superior for the purpose on these Islands.

No. 46. They notice with much satisfaction three specimens of Grass Hats, which would command a good market in large quantities.

No. 3. Fine specimens of Salt from Puuloa. There being little or no competition in this greatly required article, yet we feel bound to award a premium for this specimen, shewing further progress in quality on former years.

Crochet work by Miss H. B. Judd. Your Committee award a premium for this beautiful specimen.

Barrel of Beef, by L. L. Torbert. There was but one specimen, yet your Committee also feel bound to award a premium for this very superior article, regretting that this important article is not more extensively packed.

All which is respectfully submitted.

REPORT OF JUDGES ON MISCELLANEOUS ARTICLES.

By J. Fuller.

Among the various articles coming under our observation, we noticed with the greatest interest the samples of Indigo, No. 47. The presence of this article in our Fair as an Island production, is peculiarly significant. It points to a source of wealth to this country of incalculable value.

In different districts of these Islands there are many miles in extent covered with Indigo plant, growing in the greatest luxuriance,

without cultivation. Why should this source of wealth remain undeveloped? Why should this plant, which is better than a mine of gold to the country, remain simply a pest to the grazier and agriculturalist? We hope the time is near when the manufacture of indigo shall become one of the important branches of industry upon the Hawaiian Islands.

We award a premium of $15 for the indigo.

No. 71 is a very fine silver mounted Saddle, representing a branch of industry of considerable importance, when we consider the large number of saddles imported and sold in this market. We award a premium of $5.

Also a diploma be awarded to Dr. Judd for the fine specimens of Arrow Root exhibited.

Two collections of land shells, exhibited by Drs. Frick and Newcomb, are worthy of notice, as indicating the progress of this interesting branch of science in this remote part of the world.

No. 116, a pair of gold fish, a lively and beautiful ornament to the Fair, which we recommend to your favorable notice.

No. 80, a sample of 100 tons of *Guano*, we recommend to the attention of the society, and particularly to those engaged in agriculture and gardening.

We would also call your attention to a fine sample of native cotton exhibited by Mr. Oudinot; it is pronounced by a gentleman acquainted with the article, to be equal to the New Orleans staple.

In conclusion we would not pass unnoticed the highly finished and beautiful working sewing machines exhibited by Mr. Wood. May the "Crispin family," with such assistance, never fail to furnish all Hawaiians with durable and elegant shoes.

ABSTRACT OF PRIZES AWARDED.

Rev. S. Waimalu, best Working Oxen, $5 or medal.

Rev. S. Waimalu, best Fat Ox, $5 or medal.

John Meek, best Blood Stallion, "Oregon" a certificate.

L. H. Anthon, best Blood Mare, "May Fly" $10 or a cup.

J. Meek, best Brown Mare, all work, "Lady Eleanor" $10 or plate.

J. C. Bullions, best Draught Mare, $10 or cup.
J. Meek, best Stallion over 3 years, "Young Oregon," $10 or cup.
J. G. Lewis, best Blood Mare and foal, $10 or cup.
J. Meek, best Stallion over 2 years, $5 or cup.
A. B. Bates, best Mare, over 5 years, Youatt on the horse.
J. O. Dominis, best Gelding $5 or cup.
W. S. Allen, 2nd best Gelding, Youatt on the horse.
Messrs. Brown, best Native Stallion, silver medal.
J. Meek, best Imported Boar, $5 or medal.
W. Webster, best Native Sow, $5 or medal.
R. Moffitt, best Wool, 3 Fleeces, $5 or medal.
H. G. Crabb, best lot of Poultry, $5 or medal.
J. I. Dowsett, best Muscovy Ducks, $3 or Book on fowls.
East Maui Plantation, best 100 lbs. Sugar, $15 or Goblet.
Cumings & Hall, best Coffee, $10 or cup.
M. M. Gower, best wheat, $10 or cup.
J. S. Emerson, best 20 ears Corn, $5 or medal.
J. S. Emerson, best Beans, $5 or medal.
Kekaha, best Crop of Wheat, $15 or cup.
F. A. Oudinot, best Irish Potatoes, $3 or book.
Lolohi, best Sweet Potatoes, $3 or book.
Archer & Gruben, best Tobacco, $10 or cup.
Hawaiian Steam Flour Co., best Flour and Meal, $10 or cup.
Mrs. J. Makee, best Variety of Flowers, $10 or cup.
Wm. Hilldebrand, 2nd best Variety of Flowers, medal.
Mrs. G. P. Judd, best Floral Design, a pair of vases.
A. McKibben, 2nd best Floral Design, a bronze medal.
Mrs. Wm. Ladd, best Boquet, silver boquet holder.
Mrs. J. Makee, best Variety of Roses, silver boquet holder.
J. H. Wood, greatest number of Fruit Trees planted; Downing's Fruit Culture.
A. Philips, Lihue Plantation, best Ox Yoke, $5 or medal.
Mrs. Halekai, best Hats, $5 or medal.
C. W. Vincent, best Salt, $15 or cup.
Harriet B. Judd, best Crochet Work, $2 or diploma.
L. L. Torbert, best Salted Beef, $5.

D. Frick, best Indigo, $15.
Robinson & Hughes, best Saddle $5.
G. P. Judd, best Arrow Root, diploma.
F. A. Oudinot, best Collection of Vegetables, $10 or cup.
J. T. Gower, best Peaches, $5 or medal.
M. Halstein, best Carrots, $3 or book.
F. A. Oudinot, best Cabbage, $3 or book.
F. A. Oudinot, best Egg Plants, $3 or book.
Mrs. Whitney, best Raisins, $3 or book.

ADDRESS OF HON. G. M. CHASE.

To the Royal Hawaiian Agricultural Society:

Why I have been selected to discourse to you upon the important subject of agriculture in these Islands, I do not know. I do know, as you probably all know, that I am a stranger to the productions of a tropical soil. I have never even seen your cane fields and sugar mills. I have never visited your coffee plantations, nor learned from observation the amount of science and labor bestowed in the cultivation of your wheat farms. Although surrounded by them, I have not yet learned the science of patting and treading taro patches, which every where exhibit a vast amount of agricultural labor. Of what can I then speak to you understandingly, for to these your attention, your labor and your capital are mostly devoted? As I cannot have the benefit of your answer to this question, I will content myself with the benefit of your indulgence if I wander a little from what you may deem appropriate to the occasion.

I have never seen your Constitution and By-Laws, but I presume the Society is made up of both native and foreign population, and that the interests of both are equally cared for. I design my remarks mainly for the benefit of natives. I should feel proud if I could awaken in them an interest on this subject, corresponding to the interest felt and exhibited by those who ought to be considered but grafts upon the trunk of their society. I know the language I employ is not generally understood by them, and that few if any of them are present to hear me. But if I advance anything worthy of their regard, I

doubt not they have friends and representatives here, to whom I may as well speak, who will disseminate the seed which is worthy of cultivation. I trust what I may say will not be uninteresting to my foreign friends engaged in promoting the objects of this society, as their interests are indeed identical with the interests of all.

I would contemplate these Islands as an infant state, just emerging from the heart of the vast commercial ocean, on whose bosom the mariner of every country is now unfurling sail, or feeding fire in the hot pursuit of wealth and fame. Blessed by Providence beyond example, perhaps, on the habitable globe, with a genial climate; while the rays of the hot sun are not permitted to reach its soil without being cooled and moistened by the breath of the salubrious trades, this young state begins its existence with the inestimable promise of health. It guarantees long life to the industrious and temperate—promises comfort and ease to those who would retire from the struggles of business, and whispers hope to the despairing invalid.

It is here a remarkable but well settled fact, that owing to the almost never ceasing current of the ocean air upon the land, the man whose system has been matured and braced in the cold clime of the north, can labor comfortably in the hot noon-day sun, as he can do in no other country of the same latitude.

Nor is labor here without its reward to the individual and the state. I shall dwell upon this topic by and by. I refer to it here merely to show that this young state has resources which can be profitably called out to render it useful and important to the commercial world, and thereby to itself.

The mariner needs repose. That element, to whose bosom he has wedded his life, will not promise him continuous health from his ever indulgence of her embrace, but cautions him at periods to snuff the breezes of *terra firma*, and partake the fruits of that element from which his being sprang. The noble ships, in plowing this vast field of waters, need recruits, fresh provisions, vegetables, fruits, perhaps repairs, and often a pillow and nurse for her sick and wounded.

This young state peers up in her central position, and has capacity and convenience to supply all. Her position and safe harbors, put her beyond the influence of competition and if her resources are duly developed, she must soon and forever be the great hotel, depot and market place of the Pacific.

From any thing which has yet been, we cannot estimate the importance of this market place. The Commerce of the Pacific is yet in infancy. Long years will not elapse before the iron horse of the Atlantic will be heard rushing through the Rocky mountains to the Pacific, to meet and there exchange burthens with its kindred mermaid-filly from Japan and China, via the Sandwich Islands. Then scarcely a day will dawn which will not bring to your harbors foreign ships seeking supplies and recruits, and cargoes of your Island productions. Nor shall these drive away the whalemen, but render the inducement much stronger for their semi-annual return.

Are you prepared for this time? Have you resources which will enable you to supply wants which will thus bring you valuable customers, and make you neighbors with the whole world? I assert you have; and I propose to consider the question, Where is the key to unlock these resources, and the importance of your turning it.

You hold this key in your own hands. Your social enjoyments and welfare, your health and your morals call upon you to use it. The present and future condition of your state—its growing wants, its independence, its claim for rank among the nations—require you resolutely and manfully to turn this key. As you do so, the herds upon your mountains will multiply and become docile; the highlands will proudly wave their cereal locks, and the rich valleys will not only blossom like the rose, but pour forth their ripe abundance to fill the lap of the husbandman. Turn then this key! Its first influence will be to give comfort and wealth to individuals; its sure result will be to create resources for your state, to pay off its debts and fill its treasury; to defend your independence, to erect your school houses and maintain your schools; to build your roads and bridges, and to attract the artizan and laborer from other shores to share in and add to your prosperity.

You no doubt anticipate me in my reference to this key. *It is Agriculture;* that ancient and honorable occupation which lays at the foundation of all the wealth and prosperity of the world—indeed, which has given to the world all its real wealth—which has furnished our race, and still promises it, the greatest degree of physical health and perfection, and which, by its compatibility with our moral senti ments, secures to us the best preparation for the life which is to come.

Does it not furnish the world its wealth? It feeds the artizan and the manufacturer; it loads the ships of commerce; it is the great producer and provider for all trades, professions and occupations. It is the great wheel which directs, regulates and controls the business of the world. It may as well be said to be the Autocrat of the business world, as that the Czar of Russia is the Autocrat of the millions of serfs, who smile in his favors or tremble under his frowns.

It is said of Alexander that he conquered the world—of Napoleon, that he came near conquering Europe, because these mighty men paid, supported, controlled and directed the forces which brought about the results. So with greater truth may it be said of agriculture, as it feeds and supports all other kinds of business, and no one can live without it, so it controls the world. To come nearer home, it is said an illustrious chief of these Islands, of a few generations past, for no other avowed or conceivable object than ostentation, built a road some fifty feet wide, and paved it with flag stones, all round the Island of Maui, a distance estimated one hundred and fifty miles, parts of which road still remain entire to attest the truth of the tradition and the existence of the wonderful work.

Now, may it not with equal truth be said, when the agricultural resources of East Maui shall be fully developed; when she shall not only feed the population of the Islands with bread, but also the whaling fleet and merchantmen calling here for supplies—when she shall supply our markets with all kinds of vegetables and fruits which are produced any where between the poles and the equator, that the agriculture of that Island, as it shall bring wealth to individuals, and consequently resources to the government, will build roads, if not costing as much labor as that built by the great chief, of much more benefit; will build and employ vessels of commerce, churches and school houses, wharves and store houses, mills and workshops, and what is still more important, will populate that Island with a hardy, intelligent, virtuous, independent, happy people.

Agriculture will do *everything* for man. It will not only feed and clothe him, secure him health and long life, making his bread sweet and his sleep sound—give him independence of thought and action, but its pursuit is a medium through which thought and contemplation perpetually flow to the creator of the earth and of its wonderful pro-

ductions. *God is a co-laborer with the agriculturist*—his companion and never-tiring, never-failing friend. The one plants while the other moistens with His showers, and warms with His sun the seed, and makes His earth produce the rich foliage, the beautiful blossom and the hundred fold increase. In all this the latter exacts no share.—He gives all to the husbandman, and is ever ready to repeat and enlarge His beneficent favors.

And where on earth has this great friend of the agriculturalist been more bountiful in His gifts than in these Islands? He has provided a soil and climate for the growth of every thing. The florist may transfer here all the pride and beauty of the northern garden, to vie with the perennial charms of the blooming tropics. The kitchen purveyor may pluck the mango and the orange as he goes through the garden to gather the beets and carrots, the cabbage and Lapland turnip, the cucumber and lettuce, and the bread-fruit and banana for his dinner, while he will not forget the huge melon, the pine apple, and the delicious grape and fig for his dessert. Fields of wheat, barley, oats and corn, producing in quantity, per acre, beyond a parallel, may be seen waving their golden tassels surrounded by fields of sugar cane. The reaper of these fields may rest his limbs and cool his body in the shade of the coffee tree, while he sends the native boy up the lofty, limbless cocoa nut tree for milk to quench his thirst. The yam and the sweet potatoe, without complaining of foreign influence or naturalization laws, or forming "Know Nothing" societies, nestle in their expanding growth in the same soil with the Irish potatoe.

Such, in these Island oases of this desert of waters, has been the favoritism of Providence in providing a soil and climate for the growth of every thing, and in directing the salubrious winds of the ocean to fan perpetually the brow of labor, and bear away upon their wings all miasmatic influences which, in other countries of the same latitude, so generally prey upon health and life. And shall such propitious Providence be answered as the servant of old answered, "*Lord, I went and hid thy talent in the earth: lo, there thou hast that is thine?*"

Not so: bring out the increase a hundred, yea, a thousand fold. Remember the key. Turn it and receive the glorious reward—a reward, the enjoyment of which will not be lessened to you because it will descend to your children doubled in value, and will increase the

numbers of your posterity in the ratio of the present and past decrease of your people. It will plant upon the cheeks of your maidens the rose of health, a reflection of the blushes of which will be a palisade for the protection of virtue, while your young men will rival your chiefs of ancient renown in athletic hardihood, pride and ambition, *and your childrens' children will rise up and call you blessed.*

Turn then this key. Your old folks will love to do it. It will be for them a pastime in the season of their dotage, while your *kamaliis* will be their companions to lighten what then will be a toil, and share what will be of amusement and reward. The ribald song and idle gossip will soon give place to the rustic chorus of the plowboy, and the rural melody of the milk-maid. The herdsmen and shepherds of your thousand hills will radiate the healing virtues of pastoral life upon the surrounding vallies; and the sailor, if he carries disease from your shores, will have to look for its origin in some other country, or in the excessive indulgence of your rich fruits, or in the intoxication caused by the use of *imported* poison. The Sabbath will be a day of rest and worship. The night will be a season of repose and sleep, and every day under this perpetual summer sky, will find here the most happy, as they are the most favored people of the earth.

Rise then and turn this key to your deliverance. Palsied be the hand that has undertaken to write "mene tekel" &c., upon the walls of your nation's palace. Disappoint the evil auguries which float along the wake of your career. Tear down the ensign which streams above the march of your physical being from van to rear, on which is emblazoned the prediction of your sure and early extinction as a race, from causes which add no honor to your name and history. Gladden the hearts of those well tried foreign friends who have so long and earnestly reiterated from the bosoms of their love for you, the doleful ejaculations, "*why will ye die!*" Above all honor and obey that God whose partial bounty has signalized His care and regard for this people, and whose terrible warnings of his displeasure at the ingratitude of his children, cannot always be unheeded with impunity.

Let us take a practical view of this subject. Let us make a working survey, as the Rail Road folks say. I shall be excused for being plain, in treating a subject which is plain. One who was born on the banks of the Connecticut, and who spent his early life among the hills

and valleys of the Green Mountains, where the wealth, intelligence and independence of the farmers show that they have successfully contended against a rugged soil and cold climate; cannot be expected to pronounce a eulogy upon the agriculture or inhabitants of the Sandwich Islands. The surgeon probes the wound which he would heal. The law-maker first considers the evil and then enacts the remedy. The divine pictures to us the serpent in the garden, and then points to the Cross. So let us look at these Islands as they are and have been, and then consider what they should be.

The prosperity of every nation begins with its industrial classes.—No nation can be called wealthy and prosperous, whose masses are poor and indolent—nor intelligent whose children are not provided with schools—nor moral whose matrons and daughters are not the vestals of virtue. How does this young state in these respects? It is now time to try the question. Ignorance should no longer plead against responsibility. Three great nations have long ago sent here specimens of their enterprise, their learning, their arts, their industry, their highest virtue and piety, and perhaps of their worst crimes. These representatives have long mingled, almost daily with this people, while the numerous whalemen have semi-annually returned laden with the wealth of their daring enterprise. The stimulant of example to industry, wealth and prosperity, has long been here. *Has it permeated the native masses?* I am happy that I can be spared the pain of answering. Let the road side answer. Let the beautiful, uncultivated valley and plain, the primeval forest, the crumbling adobe walls, the ruins of kalo patches like those who formerly wrought them asleep in the shade; let the untamed bullock, the unshorn flocks, the jaded and mangled horse, the empty market houses, the half nakedness of the people and the idleness of youth, give the pantomimic answer which will be more graphic and impressive, than any opinion of mine.

Let the speeches from the throne, the reports of the Judicial and Cabinet officers of the Government, especially the reports of the distinguished and beloved Chief Justice and Chancellor tell the melancholy story of that vice, the existence and prevalence of which not only tarnishes the fame and reputation of Hawaiian mothers, wives and daughters, but threatens to annihilate their race. I need not say

more upon this subject. They who have eyes to see, and ears to hear may see and hear enough without listening to me.

I will speak upon the subject of Hawaiian school education. The success which has attended the efforts and means of educating youths in the native language, entitles the Government, the teacher and the pupil to praise. If like improvements had been made in the arts, agriculture, manners, industry, and virtues of the people, this day would have witnessed other and grander scenes and ceremonies, called forth other actors and sentiments, and infused greater hope and pride into the bosom of humanity.

As a specimen of the higher order of schools, the one at Lahainaluna, may be refered to with pride. New England would hardly be able to exhibit from one school eighty boys of better appearance and manners. It would seem as if the influence of such schools would arouse the people from their apathy—would stimulate the pride of Hawaiians to give their name and state a worthier rank among the civilized nations of the earth.

But though success has attended education in the native language, and its consequences have been beneficial to the people, yet measurably it has been a failure in the great object to be effected. To bring up the nation—to preserve and continue the vitality of the race, to give importance and success to the rank and pursuits of the people, and secure the least chance of competition, or even preservation, in the present overwhelming electric career of other nations, *the Hawaiian language must be abandoned.* It will sink all who cling to it.—Their fate will be as the pebbles stirred up by the rushing of the mountain torrent, till sooner or later they will find a lodgment in the bottom , while the rushing waters will roam on burying and concealing all beneath.

The Hawaiian language has no history. It has no literature and never can have. The time will never be when the histories and literature of the world will be translated into this language. Then what is to be done? Are the great lights and guides of other days, and those which now and will hereafter spring up to illume the vast firmament with philosophic truths, all to be shut out from this people? It must be so if this language is not changed. It has no windows through which to look from its solitary confinement, upon the wisdom of past

and passing time. The great nations of the civilized world are rapidly advancing in the improvements of the arts, the discoveries and developments of science, and in correct theories of the government of man. A great nation in its rapid strides to wealth, prosperity and power, has just now visited yonder shore, and is exhibiting its wonderful progress. It carries triumph wherever it goes—not of force or fraud, but of the arts of independence, of enterprise, of reason and right, appealing to the mind of man. Already its language and principles of law and Government have sought these Islands, and indeed are planted here. Its language is employed as the medium of legislative mandates and of judicial construction and authority. Its use is becoming familiar, if not necessary to all the organs of power, and in all the transactions of important business affairs. Having got such a permanency, will this language die? Rather will it daily increase in its influence and use, and finally control the destinies of this people? *It most certainly must*, and those who ignore it will sink under its extending power. Those who adopt it will be embraced in the ranks of its enterprising masters, and will at once enter for improvement into the vast libraries and laboratories of human knowledge. The present in this respect brings up that "tide in the affairs of men" which is destined to "lead on to fortune," and "*leave not a wreck behind*" of those over whom it rolls.

Let me now propose and consider what should be done for the interests and upbuilding of this young state. Too great importance cannot be attached to a system of common schools. Let every Island be divided into school districts, required to have a local superintendent, whose duty it shall be to have an open school a fixed proportion of time, in which shall be taught the English language and nothing else. Let all other praticable means be used to encourage and promote the general use of this language.

Two great desiderata which have here long occupied the earnest attention of public men and philanthropists, are the promotion of sexual virtue, and the industry of the people.

In relation to the former, I doubt the efficacy of *intense* legislation in promoting the object. These are crimes of which it has with truth been said, they are so revolting to our feelings that legislating against them, is of itself an evil, for it presumes, what would not otherwise

be presumed, their commission, There is danger in this case that legislation will be carried so far as to create a public impression of almost a total disregard of this virtue, and the sense of modesty, pride and decorum, which should be the higher law upon this subject, will be blunted if not destroyed.

The great remedy for this, and many other evils, will be fonnd in the successful promotion of the other object—the industry of the people. Here is the field for labor. Here should be combined and concentrated all remedial efforts.

Though the saying, that idleness is the parent of mischief, is stated as a truism, it cannot be too often considered. It is the seminary of almost every vice. Its pupils and votaries go on from branch to branch until they graduate in grog shops, gambling and other vicious houses, in hospitals, in prisons and on the gallows. Who can tell what a world of sin and suffering might have been avoided, if our mother Eve had been included jointly with Adam, in the command to "keep and dress the garden." Any industrious employment might have removed and protected her from the low temptation of the serpent. Being idle she listened; listening she yielded; yielding, the womb of Time, and perhaps the ages of Eternity, were made to inflict and perpetuate upon her unoffending race, the punishment of her disobedience.

O Industry! How can its blessings be too highly valued? Its sweat is the dew of health. Its bread is ever a feast to the body.—No dreams but those of delight disturb its healthful sleep. Its offsprings are a happy heart, a healthy appetite, a downy pillow. Its rewards are wealth, long life and all the fruits of virtue.

To promote industry, the great panacea in these Islands, agriculture must be brought up. Instead of there being one society, and that here for all the Islands; each Island should either have a branch or an independent society, and should hold annual Fairs at home. Perhaps it would be best to have an Agricultural Congress of Representatives from all the Island Societies, held here annually immediately after the Fairs in the several Islands. The details and minutia I will not go into. But it must be apparent that a general interest can be awakened only by stimulating and encouraging the people at their homes, and by giving them convenient opportunities to exhibit their productions, and compete for premiums and rewards.

The Government should move in this matter. To encourage the creation of a fund to be devoted to premiums, Government should appropriate an amount equal to what individuals in each Island raise for the same purpose. It should establish also, at least for the present, a system of bounties to be offered and given for the production of certain agricultural articles, the encouragement of which will be beneficial to the interests of the state in respect to exports, and a home market. For instance the articles of wheat, sugar, coffee, wool, tobacco, corn and all other grains, salted beef and pork and such articles as oranges banannas and other fruits and vegetables, which are raised *and actually exported* or *furnished for export*, should be considered by the Government with reference to the question of bounty.

Instead of prohibiting the manufacture of wine from the grape, as was the case till quite recently, I am of opinion it should be encouraged by the Government. I am clearly of opinion that the least amount of drunkenness exists in wine producing countries, yet I forbear on this occasion going into facts and statistics to prove it. I however will say that I limit my remarks to the rural districts and do not include the large commercial places in those countries. For example the city of Paris consumes a vast amount of distilled liquors, and consequently has a vast amount of drunkenness; while the interior, or rural districts where the wine is produced consume but little distilled drinks and consequently have but little intoxication or crime arising from intoxication.

There are very considerable parts of these Islands admirably calculated for the production of the grape. The soil is the right kind. The vine produces in size, weight and quantity of fruit so abundantly as to be hardly equalled in the world. The climate at the time the fruit ripens and is gathered, is uniformly dry, and consequently the great damage and loss by rains on the ripened fruit which are more or less suffered in other countries, can never occur here.

Why should not the Grape culture be immediately commenced for the purpose of supplying your own market with what wine it requires, and excluding importations, and for the purpose of exporting the grape and the wine? Of the wine produced, there would undoubtedly be drank here a proportion. What would be the effect? The great

evil arising from the drinking of wine, or other liquors is intoxication. If therefore the amount drank is larger but the intoxication less, the evil is diminished. Who can doubt that ten times the quantity of the pure juice of the grape can be drank without producing the intoxication and delirium which are produced from the quantity now drank of the miserable poisonous compounds in use? The best wines which are imported and used here, probably contain more than one fifth alcohol, or something, as a substitute, worse. While the use of these poisonous compounds inflames a thirst for a repetition of the dose, the unadulterated juice of the grape, if it stimulates or even intoxicates, does not leave that stinging poisoned thirst behind, which leads the victim to that delirium, the only cure of which, is its own horrid conquest of life.

I would not encourage or justify the use, as a beverage, of pure wine or pure alcohol. But I may properly compare the evils of such with the evils of tobacco-beer, or, what is little better, imported liquors and wines. While the former exhilarates, the latter stupefies and destroys. The effect of one is like an elastic material which will stretch and return to its original place. The other will expand, and in doing so loses its power to return. The one like steel will spring back to its place. The other like iron remains fixed as it is bent. The one prepares the sight to transform the twinkling stars into suns and moons with multiplied numbers, the other will have nothing seen there but a chaos firmament lighted only by the gleam of demon figures. The one produces a fool with lucid intervals, the other a maniac with only brute intervals.

I insist that the greatest obstacle to temperance and the greatest cause of intemperance, is not in the amount of alcoholic and fermented liquors drank, but in the poisonous ingredients with which they are alloyed. Will any one therefore deny me that the manufacture of pure home wine which will need no alcohol for its preservation, will do the great good of very soon preventing the importation and manufacture of the vile drinks which are now so much used here? I think not; and I feel certain that in such event, intoxication will be lessened. Then let the government *favor* this *home* industrial pursuit and guard by strict laws against all abuses of the privilege.

Another question is, will the people go into the business? I think

of all others it is *the* business they will go into, and the business which will establish industrious habits in those districts where it is carried on. My reasons are, that the grape growing needs no capital—soon yields its fruit after being planted, and undoubtedly with more profit on the amount of labor expended, than any other production. Every vineyard may not have a wine press. Every vine will produce in the grape a marketable article. There will be no want of small capital to invest in manufacturing the wine. One man will make the wine, from grapes raised by twenty others. He will pay a fixed price for the grape, so that it will at all times command a staple price. This is the great thing wanted. The native raises nothing now which has any fixed certain value, except perhaps in this town. If his melon gets ripe on Saturday he may sell it for three reals, if not till Monday he may need two to get *one* real. So of almost every thing used by foreigners. There is no reliable market. Even potatoes the great article for whale ships, one month may sell in the districts where they are raised for two and three dollars. The next month when the ships are gone, they will be down to half a dollar. No wonder the native is discouraged from investing his labor in so uncertain a reward, and drops back into indolence by the side of his calabash of poi. Let him know, as he will, when he plants and when he trims his vine, that he will certainly in due time, receive a remunerating price for his labor, and I doubt not that very soon, every humble homestead will be nothing but a grape arbor, under which habits of industry will betoken a happy change in the domestic circle.

I will not dwell longer upon this subject, although I should like to demonstrate, that large profits would be derived from the grape culture,—that both in the grape and in the wine, principally in the latter, export articles would be produced, which in a short time would exceed in value, probably, all other exports of the Islands, and that consequently government, in its present condition, is more interested in this production than all others. I congratulate the people upon the fact, that an effort is now being made by a gentleman, who has recently arrived from the coast with several thousand slips of foreign grapes to introduce and extend their cultivation here,—an operation

and investment which I consider more important to the future prosperity of the Sandwich Islands, than if every slip were a slug.

> Whose eye is upward turned and fixed,
> His feet lag not in the ascent.

Whether the culture of the grape, sugar, coffee, wheat or anything else is most desirable for the prosperity of the people, there needs a fixed purpose and will in the undertaking. As I have before represented, nature waits for the co-operation of man to send forth from the earth, in these Islands almost every vegetable abundantly. She will not do *all* the work alone.

If agriculture has produced the greatest degree of wealth and prosperity in other countries, it offers higher here. Nothing but energy and labor have been wanting, nothing else is now wanting, to give to these Islands pre-eminent success in all branches of agriculture.

The New Orleans sugar planter could realize a greater profit on an investment here, than in the bottom lands of Louisiana. "What and pay thirty per cent on sugar exported to the coast?" I shall be asked. I have no doubt of it, and those who have gone into the business here, and who complain of hard times, by taking into consideration the yield of sugar per acre, the labor and risk of planting the cane every season in Louisiana, the certainties and uncertainties and the expense of the crop, and the prices current on the two coasts of the American Continent, will be compelled to admit the fact.

I say the same of the coffee planter in the West Indies in relation to an investment in his business here.

And how is it in relation to raising wheat here? In Ohio, Michigan and Illinois an avarage yield of wheat is but little over fifteen bushels per acre. The farmers on East Maui look for over thirty. They always expect twenty-five, and are sure of over twenty. The average price of flour in New York and Boston, good and bad for a series of years, it is estimated will not exceed six dollars per barrel, and yet those western farmers who supply those cities get wealthy. What a picture it is, which shows *us* on this day contributing to that wealth, by eating their flour, while the land is cheap and idle, and the labor unemployed which should be employed, and would be rewarded by almost double the quantity of wheat per acre, and more than double the

price of flour per barrel. Add to this, that the farmer here has almost double the time in the year to work his crop and land. His team costs him comparatively little or nothing, and the keeping really nothing. Those western farmers, as they are called on the Atlantic, more or less bread the world. *We* do not bread ourselves.

The farmers of New England raise beef by pasturing their cattle in the summer, and raising hay, grain and vegetables to feed them with in barns and stables during the four, five or six months of winter. They drive their cattle, when raised and fatted, to Boston market where the beef is salted. That same beef is disposed of to feed eight thousand men, now and constantly engaged in taking whales in and about this ocean, consuming thirty-six barrels of beef every day, or thirteen thousand barrels every year, while here in the very highway to the whale ground—yea almost in the centre of the flurry of the occupation, where the whalemen come up from their contests in the deep, as it were, to *spout* twice a year, is a group of Islands, containing in their luxuriant hills and vales, plenty of tame and wild cattle, raised and fatted without the care of man, which ought to supply and feed these eight thousand whalemen, or a great part of them, with the best beef in the world every day in the year.

I have seen four quarters of a bullock hanging in a butcher's shop in the port where I am stopping, which weighed fourteen hundred pounds, and this was no uncommon sight in that shop, yet if those quarters were hung in Boston or New York markets, their richness would have attracted the notice, if not wonder, of every butcher and drover who should see them. It is estimated there are now from 12 to 15 thousand bullock who have no owner, fattening on the hills of the Island of Hawaii, hundreds of which no doubt would furnish handsomer beef than that just spoken of. But it matters not whether the cattle are tame or wild, the tame ones cost but little more, and yet the beef which is raised and fattened upon the toil of man, in the cold climes, far off on the shores of the Atlantic, is brought here, at great expense, to supply our market.

In New York and New England, where the expense of feeding cows is greater than any other stock, the farmer is content to get in one year and another, on an average a real a pound for butter. We pay here anywhere from half a dollar and upwards per pound for Island

butter, while the cows (and they are numerous every where,) which supply the material for it, never desired or had a mouthful of food from the hand or enclosure of man.

So I might go on multiplying comparisons of the cost and price of the long list of agricultural productions of the two countries, which would not materially vary the pictures I have already given. How would the pictures look, if in the centre of each group I should finish the comparisons, by a picture representing the moral, intellectual, pecuniary and physical conditions of the farmers of New York and New England, and on the other hand of the people of the Hawaiian Kingdom. I will leave this part of the picture to be drawn at some future time, when I hope its truthfulness will more redound to the honor of *this people*, and manifest the great good and usefulness of this society.

It is however, proper for me to say that the farmers of the United States, with all their hardships of soil and climate, realizing not half the compensation for agricultural labor, which could be realized here are, as a class, the most independent, intelligent and happy people on this great globe. I make this statement, not for any invidious distinction, nor a vain boast of excellence in my countrymen, but to inspire energy, ambition and industry in those more favored in position and natural advantages.

If it is said that capital is wanted, I reply that generally in agricultural pursuits, labor is capital, and of that there is no want. Energy and industry will bring this out. Foreigners who have invested in the larger operations of raising sugar, coffee, wheat, &c., will be encouraged to continue, and others will be encouraged to join them, if there is on the part of the natives a corresponding energy, industry and spirit of encouragement. The foreigner to make headway in these operations needs the co-operation of the native power in other branches and pursuits, and in legislative protection and encouragement. But let the dormant energies of the people be waked up,—let the key which I have often referred to be turned, and you will unlock treasures of gold—an abundance of capital.

To the natives I appeal as possessing this power. You hold most of the lands in the fields and in the town. You control the Legislature of the state. You have the numbers and the physical power. It is understood you are unwilling to put your ship of state under

convoy with the great fleet of the American Continent, now sailing by on its rapid way to power and glory.

You choose to manage your affairs your own way. Therefore you take the responsibility, and at this enlightened day, with such resources as are under your control, *this responsibility is great.* The civilized world has a moral claim upon you which can be satisfied only by your unlocking these resources. *They must be unlocked!* Nature, confined in the cerements of your rich soil, and under the fructifying rays of this tropic sun, is ready to burst her bonds. Art stands ready to lend a hand; Time will not much longer wait for you; the foreigner is amongst you, and offers his purse and his palm for the toil. The celebration of this day, the history and work of this society, and the improvements of other foreigners in the Islands, show you how much the foreigner has done to promote the object. I leave you to point out what else has been done in the matter of improvement of your soil.

Your physical, moral and national being now depend upon your action. Rise, therefore, like the strong man from his sleep; and go forth to the delightful work of improving the soil till it shall be *what it can be, what it must be,*—the land of rich fields and farms, of flowers, of fruits, of beautiful groves and trees, *of wealth* and *happiness.*

I can have no other hope than that this destiny may be soon worked out, and no other wish than that this people, with whom I am pleasantly sojourning, may work it out. In all of these beautiful isles, where the flowering spring and the mellow autumn are twined in one perpetual embrace, with combined locks flowing to the never-dying breath of Ocean's winds, I would have every man—no matter of what hue, or tongue, or origin—a PATRIOT BRAVE, an INTELLECTUAL CHIEF, an AGRICULTURAL KING!

REPORT ON THE SWEET POTATOE, (*Convolvulus Batata.*)

By T. C. B. Rooke.

By an omission, which I think might be remedied, I was in ignorance, like others on other subjects, that I had been appointed on this Committee until the proceedings of last year were published and sent

me. If previously informed I trust that I could have prepared an article more worthy of your attention.

Simple as the subject for the report of this Committoe appears to be, it is one on which much time and research may be expended by the curious, and more extensive and amusing than many would suppose, if their attention has not been previously attracted to the subject.

In former times, when these isolated Islanders had few objects to attract their attention beside their clanish wars, all observations of the phenomena of nature were minutely and carefully noted. The greater part of these observations are now nearly forgotten, or only remembered by the few survivors of the olden time, and still existing metrical legends. But although long neglected, it is astonishing to witness with what eagerness and vigor of memory these subjects are discoursed on with any one who will enter their humble habitations, adapt himself to their simple manners and language, and lead the conversation to the subject on which he wishes to gain information.

Among other familiar subjects formerly observed with the most careful minuteness were Botany and Astronomy, but of which the mass are now entirely ignorant; and the remnants of the knowledge once common, is now only preserved among a few old fishermen and farmers, while the appreciation of dollars and cents is in the ascendant.

Under the head of botanical or horticultural observations, were those bestowed on the culture of the numerous varieties of the sweet potatoe or *uala*. It was, next to the *kalo*, the staple food of the inhabitants, and in the culture of the different varieties, their nice distinctions were carefully marked, for while they had an overflowing population, these observations became a subject of vital importance. An ordinary botanist would hardly draw a line between the several varieties as marked by the aborigines; but by my own observation, I know that they are perfectly distinct, and propagate a similar variety when transplanted into different localities. The variations are as marked as those of dahlias, geraniums or tulips. It was of material consequence to notice which kind was the most profitable produce in different regions, aspects and soils.

I have endeavored to collect a list of a few varieties of the indigenous kinds, not noticing any of those recently imported since the

discovery of the Islands by Capt. Cook, with a tabular description of them. Generally the antiquity of these varieties is established by the tales or legends connected with their names; and in some instances, the very localities they are derived from are mentioned.

My attention was first called to this subject in 1840, when on an excursion to Waianae on this Island, in company with that most respected clergyman, the Rev. A. Bishop. An old inhabitant there enumerated to me thirty-two varieties with which he was acquainted. I scarcely believed him at the time, but shortly after my return I had more than twenty of them growing at Waolani; and have since procured (in 1849) some very fine plants of other varieties from Kalaupapa, on the Island of Molokai, and others from the Island of Niihau. since which time I have not paid any attention to the subject.

In submitting the following list, which is arranged alphabetically, I will remark that some of the varieties have different names on the various islands of the group; I have, therefore, been careful to confine myself to the names known on the Island of Oahu—and there even they have sometimes two or more names for the same variety, although synonimous, as for instance, *Haulilani*, (fallen from heaven,) is also called *Helelei*, (scattered, as in a shower,) &c.

The legends attached to some of the names are amusing, but oftener indecent, as most legends among the lower classes are. I will endeavor to mention some of the best known varieties, but there are many others with which I am unacquainted.

NAME.	Exterior.	Interior.	Leaf and stalk.	Root.	Observations.
Apo,	Dark,	Red'ish,	Purple,	Firm,	Moist soils.
Awapuhi,	"	White,	Divided, purple,	Hard,	Wild, very small.
Auono,	White,	"	Green, undivided,		Anywhere.
Eepuu,	"	"	" divided,		Kula lands.
Okohola,	Dark,	Yellow,	Divided, dark,	Firm,	
Ulu,	Purple,	White,	" purpleish,		
Huamoa,	White,	Yellow,	Undivided, round,	Firm,	Anywhere.
Helapa,	"	"	Divi'd, light green,		Valleys and plains,
Hualiilii,	Yellow,	White,	" green,	Hard,	Kula lands, very
Heeuau,	"	"	Undivided, green,	Firm,	Rich soil. [sweet.
Helelei,	"	"	" dark,	Soft,	Stony ground.
Heakeaiule,	White,	Yellow,	Round, green,	Hard,	Anywhere.
Hoolulelule,	"	"	Divided, "	Soft,	"
Heunaheuhu,	Yellow,	White,	Undivided "	Very hard,	"
Hepaa,	White,	"	Divided, "	Hard,	Rich soil.
Hawaii,	Dark,	Dark;	" dark,	"	Light soil.
Halonaipu,	"	Yellow,	" "	Firm,	"
Hookeo,	"	White,	" "	"	"
Kekake,	Purple,	"	" "	Hard,	Kula lands.
Kihipoipoi,	Yellow,	"	Undivided, green,	"	"
Kihilaumanamana,	"	"	Divi'd, light green,	"	" keeps well.
Kipawale,	Red'ish,	"	Undivided, "	Firm,	Rich Soil.
Kekawowo,	"	"	Divided, dark,	"	"
Koali,	White,	"	Undivided, "	Hard,	Stony ground, long vines, hardy.
Kaukaele,	Yellow,	"	Divided, spotted,	Firm,	Anywhere.
Kekoha,	White,	"	Undivided, green,	Soft,	Cultivated ground.
Kuunahawela,	"	Yellow,	" light "	Firm,	Anywhere.
Kalakeokeo,	Red'ish,	White,	Divided " "		Taro patch banks.
Kawelo,	Orange,	"	"	Not good,	Anywhere.
Kawao,	Dark,	"	" purpleish,	Hard,	
Kekakeeleele,	"	"	" "		Good soil, very
Koumi,	"	"	" dark,	Soft,	" " [large.
Kekokoakeawe,	Light,	Dark,	" purple,		" good for
Kanika,	Dark,	"	" dark,	Floury,	Light soil. [poi.
Laholoa,	Orange,	White,	Undivided, "	Soft,	Anywhere.
Lihilihipalu,					
Laholile,	Dark,	Dark,	" "	Floury,	Good soil.
Likolehua,	"	Red'ish,	Divi'd, dark green,	"	"
Lilimolina,	"	Dark,	" "	Firm,	Light soil.
Maunapohaku,	"	Red'ish,	" "	Hard,	Moist places.
Nukulehu,	"	White,	" purpleish,	Floury,	Good soil.
Pauu,	White,	"	" dark,	Firm,	Large, knobby, hog [food.
Puhi,					
Paiowea,	Dark,	Orange,	" "	Hard,	Light soil.
Palama,	"	"	" "	Firm,	
Palakaia,	"	Dark,	" "	"	
Waipalupalu,	Yellow,	White,	Undivided, "	Soft,	Anywhere, foreign-
Wailaulau,	White,	"	"	Hard,	[ers' favorite.
Wehiwa,	Dark,	"	Divided, "	Firm,	Good soil, large.
Uahiapele,	"	Dark,	" "		

The mode of propagation in use with the natives is similar to that of the cabbage—from slips taken from the strong thriving plant. The nasturtium is also propagated in the same way; the slips or portions of the vine are set out by threes or fours in a hill. The cultivation, when the plough is not employed, is that of holeing and hilling. Sometimes the hills are covered with small pieces of lava, which not only prevents evaporation, but defends the roots from the attacks of poultry, &c. After this, if ordinary care is bestowed on the soil, they will generally return two or three crops within eight months. Of course the first crop is the best, but the second is often good. They are respectively called the *uhai*, 2d the *kuapue*, and the 3d the *kalina*.

Of their nutritious qualities little need be said. The quantity of saccharine matter contained in them, vouches for it. When baked in the native manner, and made into poi, it forms a light, nutritive and delicious repast for those who use it, unaccompanied with the replete sensation occuring after a meal of the same article prepared from *kalo*. When left for a time to ferment slightly, it is light and exhilarating; but a still longer time of fermentation, renders it intoxicating. It is much to be regretted that in some districts, I may say the whole of some districts, the entire crop is perverted from its proper use, and dedicated, not to Ceres, but to Bacchus, as the statements made by the Honorable member for Ewa, during the late session of the Legislature, will tend to prove. This is a cause of much regret to all those who have the welfare of the native race at heart. It appears to be one of those irremediable evils, which, if overcome at all, can only be done by instilling a moral sense of the disreputability of such conduct into the aborigines.

The sweet potatoe, although an article of food, is not without its medicinal qualities; and there are many of those who are afflicted with an obstinate costive habit, who are relieved by a dietetic use of this valuable vegetable. If viewed as an article of profit, I think I may say that no vegetable cultivated on this group yields a larger produce, provided, that the ordinary care of loosening the soil and keeping it well weeded is observed; and we always have a demand for the supply of foreign markets and for shipping, larger than we are able to meet, and the crops may be so managed that they may be mature when the demand is greatest.

The only diseases with which I am acquainted that are any drawback to its cultivation, are a blight called by the natives *makika*, and another called *poonalu*; and its only enemies are the caterpillar and grub, which, as cultivation extends, will gradually disappear.

REPORT ON SEEDS.

By J. Montgomery.

There is, perhaps, no branch of the interesting and important science of agriculture more important or more interesting than seeds; and the many phases in which it presents itself to the mind, would furnish material for a much more elaborate and lengthy essay than would be appropriate for this occasion. We presume the more practical and the less speculative a report on this subject can be made, it will be the more appropriate and acceptable.

We shall not, therefore, enter upon the interesting subject of the various changes which the seed undergoes in the process of germination and formation of the embryo plants, but proceed to a consideration of some of the more important practical details in connexion with its growth and progress to maturity.

The reproduction of plants in successful seasons is effected in various ways, the chief of which is by seeds, by which a vast majority of them are propagated. It will not be, therefore, out of place here to point out to your consideration some of the more important conditions requisite to secure success in this most important branch of agriculture.

In the first place, plants from which it is intended to save seeds for future sowing, ought to be always carefully examined, so as to ascertain that they are the best and most genuine of their sort, and free from all risk of intermixture of the pollen or fecundating agent of other plants of the same class, which always produce hybrids or mongrels of mixed, impure, and of course, inferior quality. Of the truth of this proposition, abundant evidence is furnished by the every day experience of us all, as the miserable melons with which our market is daily supplied by natives, and which, by the process of intermixture I have alluded to, have now become a mixture of the original melon

and the squash, pumpkin and cucumber, so that it is too frequently difficult to decide which of them has imparted most of its qualities to degenerate offspring of respectable ancestors, which, with a little care, might have been made to preserve the original good qualities of the fruit from which it has sprung.

Similar evil consequences always result from similar causes in other departments, although not always so palpably manifest to our senses, and a little investigation into the important subject will soon prove to the satisfaction of the enquirer, that no department of agriculture or horticulture will better or more amply repay the care and attention bestowed upon it than a careful separation of plants of the same class from which it is intended to propagate seeds for future crops, and a careful selection of the best plants reserved for seed.

It may be objected to what we have said, that in this country the almost total absence of bees and other insects which elsewhere convey the pollen from plant to plant, render these precautions unnecessary, but to such we would reply that in point of fact, there are some bees and abundance of moths, ants, and other insects, which achieve the work with considerable efficacy; and moreover, that of late, and I think since the last meeting of this society, there have arrived among us a colony of wasps, which have already propagated themselves to a vast extent, and which are constantly to be seen penetrating the flowers of all plants in search of food, and which, of course, are a more efficient medium of conveying the fecundating principle than any we have yet had here. They threaten to be of serious injury to fruits of all kinds, as is manifested by my papayas, which are now for the first time perforated and excavated by these pests of society.

The facility with which genuine seeds, when ascertained to be genuine, can be propagated, as well as the large per centage of profit which their careful selection yields to the farmer, are subjects well worthy of his grave consideration. The former is well illustrated by Mr. Sherriff, one of the most eminent and successful of the far-famed East Lothian farmers, who having remarked one particularly vigorous and fine plant of wheat in one of his extensive fields, marked it out, and carefully collected 63 ears, which yielded 2,478 full pickles of superior grain, which he carefully sowed apart from all risk of con-

tamination, and cultivated with equal care, and in the fourth year the produce was 40 quarters of splendid grain.

In like manner he selected a superior Swedish Turnip, the produce from the seed of which, on the third year, would have sufficed to supply seed for the entire of the British market.

Mr. Sherriff calculated that the increased yield of his crops from the seed so carefully collected and propagated, exceeded 10 per cent.

The next condition requisite to the production of good seed, and the propagation of good crops from it, is, that the plant from which the seed is to be saved shall have arrived to a perfect and healthy maturity, and that the seed should be fully ripened and matured.

Seeds which have not reached maturity may indeed still possess the power of germinating, but the young plant produced from them will be sickly and feeble, and retain a disposition to decrease, and there is great danger that it will entirely perish, and even if it survive, it is pretty certain to yield a small crop of inferior quality.

The preservation of seeds after they have been matured and collected is another important consideration. After being gathered, seeds should be carefully dried before being put away, and not only ought the moisture inherent in the seeds, but also such as they may have absorbed, if possible, to be extracted from them, otherwise we shall run the risk of having the seeds heating or undergoing the first process of germination, to which moisture is the chief agent. Spreading seeds to dry, and frequent turnings are of much value in thoroughly freeing them from moisture, and when so dried, they ought to be carefully stored, and so far as possible secured against all access to damp. It would be superfluous to demonstrate to this intelligent body, that heated seeds are deteriorated in quality, and that to use them for raising future crops would be little better than labor lost.

Some kinds of seeds retain their germinating powers with wonderful tenacity, and will withstand cruel treatment which would be totally destructive to others; and some are of so delicate a nature that all the attempts heretofore made have failed to carry them to our shores in a sound state. All of us, I presume, have experienced the sad disappointments to which I have myself been a frequent victim, in importing large numbers of seeds most desirable to cultivate here, but of which only a very small proportion retain their vital powers on arrival.

This leads us to the consideration of the question—the importance of which in this remote land can hardly be exaggerated— How is this difficulty to be overcome, and what is the best method of preparing and transporting seeds to distant lands, and the extensive ranges and changes of temperature?

Many experiments have been tried and suggestions made on this point, and all who have discussed the subject concur in one point, viz: that all seeds intended for transport ought to be fully ripened and carefully dried before packing

Of the various plans of packing seeds adopted by all experimenters, perhaps as successful as any other has been the plan of placing them in layers in sand very carefully dried, and all enclosed in air-tight cases, by which means their germinating powers have been retained for long periods and through great varieties of temperature. Charred saw dust has also proved a good medium. The charring is necessary to destroy all insect larvæ and eggs, as well as to dispel the moisture.

Oleaginous and juicy seeds which are liable to become soon rancid are most difficult of transport. These must be packed separate from each other, and some will carry best in their own seed pods. One method has been tried which has proved commonly successful, viz:— covering the seeds with a solution of Gum Arabic, which, when dry, forms a firm and impervious coat of varnish, which effectually excludes the air as well as moisture, without the presence of which the seeds can undergo no deleterious change. This plan has been perfectly successful in saving eggs for many months, if applied while the egg is yet warm, and before the atmosphere has penetrated the shell, by the cooling and collapse of its contents, and there is every reason to suppose that it would be equally efficacious in the saving of seeds, certainly not more perishable than eggs.

The subject being of the greatest possible importance to the society and to the public of these Islands, we would strongly recommend it to their serious and attentive consideration.

We are not aware that, during the past year, much of novelty has been achieved in the introduction of new and valuable seeds, but we are informed that an important fact has been ascertained by Mr. Townsend, who has, we learn, succeeded at length in prodncing seed

from the sugar cane, long found impracticable here. His success in this department ought to, and we hope will, prove a stimulus to others to go and do likewise.

REPORT ON BIRDS, BEES, INSECTS AND WORMS,

By J. W. Marsh.

To the President and Members of the R. H. Agricultural Society, for the year 1855:

Your Committee would respectfully report, that with regard to insects and worms, although they have made some observations and many inquiries, they have not received sufficient new information of the habits or habitats of any one species, or of the best modes of destroying such as are injurious, to warrant them in occupying your attention therewith. Their observations and theories require much farther verification than they have yet received to be at all reliable. The most satisfactory information the Committee have met with, is already contained in the "Report on Worms and other vermin injurious to vegetation," made to this Society in the year 1852, by Dr. Newcomb.

It is evident that we need much more systematic and careful observation of our worms and insects before we can be in possession of the data requisite for opening an effective campaign against them. It will be of little use to declare a war of extermination, and marshal our forces, till we know something of the retreats and modes of warfare of the enemy. Your Committee, therefore, would respectfully recommend that each member of this Society consider himself a special committee of one for the observation and study of the habits, habitats and metamorphoses of such insects, worms and other vermin as may fall in his way.

It is, however, obvious to remark, that while the number and variety of injurious animals of these classes, is constantly augmented by fresh supplies from abroad, the insectivorous and vermivorous reptiles, insects, and birds by no means increase in a like ratio, and will not, unless special pains are taken to introduce them. The plant devouring

worms, have in the economy of nature, a great purpose to subserve, in effecting the interchange of elements in the soil requisite for its best preparation for the uses of man. Against an excess of them, nature has herself, in countries designed for human habitation, provided a remedy in the admirable self-compensating machinery of the animal kingdom, the different parts of which, so beautifully check and balance each other, while all work together to the preparation of the earth for human use; the whole giving way to civilized and cultivated man, as he acquires the wisdom and the art to assert his supremacy, and take his proper position. This group of Islands seems to have been upheaved from its Plutonic and Neptunic birth-place in some of the last expiring struggles between Old Chaos* and Dame Nature's cosmic forces, and not to have been designed for the residence of man, at least till after the expiration of thousands of geologic years, yet in the future. It is not strange therefore, that we find here, along with a small supply of soil, amid an abundance of its crude material also a superabundance of worms and a scarcity of birds and beasts.

If, nevertheless, with our spirit of unrivalled daring, gathered from Gallic vivacity, Teutonic perseverance, and Anglo Saxon energy, tempered together by an infusion of Hawaiian *nonchalance*, we are *determined* to force nature up to our time, instead of waiting for hers; if we *will* and *must* make the lava bloom, and the desert blossom, in spite of nature, worm and insect, we must at least submit to the policy of overcoming nature by nature.

We cannot at present, except in a few and small localities, exterminate the grubs by careful and thorough culture which is the humane and effectual mode of disposing of them, but we can hold them in check and diminish their numbers, by cherishing such reptiles, insects, birds and quadrupeds as are already our allies, and by introducing others to co-operate with them.

The dragon-flies, spiders, lizards and some other insects and reptiles already do good service in destroying flies and moths, and should be protected. Of the toads and frogs which elsewhere afford such valuable assistance to the gardener and farmer, we have none. The importation of them might well deserve the attention of this Society,

* It is not intended here to soberly recognize the reality of that most irrational figment of the human understanding.

not only for the insects they would devour, but for the addition they would make to our supplies of music and of food.

The hedgehog would confer the two fold benefit of destroying vermin, and occasionally pricking the noses of Hawaiian curs. The different species of moles, also, while engaged in a philosophic pursuit of grubs and larvæ would supply a stimulus to industry for Hawaiian youth, excite them to skill in the noble art of digging, and prepare them for profitable toil in California. Such benefits would certainly more than counterbalance the damage from occasional perforations of kuaonas, and the draining of kalo patches.

Some species of snakes are very destructive to insects and terrestrial mollusks, and the Committee would earnestly recommend their introduction—did they not stand in awe of St. Patrick and the ladies.

Of native Hawaiian birds there are supposed to be some fifty different species, but in the absence of information regarding their habits, and even a catalogue of the species, we cannot well determine which of them are most beneficial to the agriculturist—though the Kolea or Plover must hold a prominent place.

Scientific visitors from abroad who have obtained information regarding Hawaiian Ornithology, appear to have, for the most part, sedulously carried it away with them. A collection of Hawaiian birds here, with information respecting their habits, and a record of the introduction of new species, is still a desideratum. A large proportion of the native species, however, belong to the family of honey eaters and accomplish comparatively little in the destruction of the insects that trouble the farmer.

On the coast, in Oregon, California and farther south, there are many species of the Finch family and of the Fly catchers, which could probably be introduced at a small expense and which would be of not a little service, while they would do no harm to fruit or grain.

Many of the thrushes would be very useful, while some of them are excellent songsters. The American and Chinese mocking birds would probably be preferable as musicians even to the frogs above mentioned.

The California quail has been introduced, and is said to be increasing rapidly on the other side of this Island, to the advantage both of the sportsman and the farmer.

The Committee are aware that this, the feathered department of their subject, opens up a wide and interesting field for discussion, but into it they do not dare to venture fully. Though the topic is light and airy, such a discussion would probably prove more wearisome to members than even a bird-hunt on the Waianae mountains. There is truth also in the statement that "any subject is *inexhaustible* when fully treated of, that is, when treated doctrinally and practically, analytically and synthetically, historically and morally, critically, popularly and eloquently, exegetically and esthetically, logically, neologically; etymologically, archaiologically, or, summing up all in one, doctor-ologically." Such full treatment, therefore, the Committee decline, finding a satisfaction in the reflection that their successors will have abundant room for fresh investigation and for—manuscript.

Respecting bees, the Committee have to say that they have not seen or heard of any of those interesting creatures for some time, nor anything more nearly resembling them than the wasps which have lately so multipled among us. Believers in the theory of equivocal generation may fancy that these latter, demi-savages as they are, will, in our genial climate develope into the more civilised and civil bee. Your Committee are of opinion that they will *not.*

If we wish real, *bona-fide,* working, honey-bees, we must continue to import them.

While on the subject of bees, the Committee cannot forbear commending the character of that virtuous and industrious insect, to the consideration of the several members of this society when next engaged in the preparation of Annual Reports.

In conclusion, it should be stated, that of the five members of this Committee, two have within the last year gone to the United States, "leaving not a report behind," a third regrets that he is unable to communicate anything of value, fourth intimates that he is not a member of the society and does not wish to be—while the fifth pleads guilty to a very general and particular ignorance on all the given topics, protests that he did not know of his appointment till the eleventh hour, and declares that he can't and won't write a report. The Committee, therefore, have no report to offer.

Respectfully submitted.

REPORT OF COMMITTEE ON KALO AND GARDEN VEGETABLES.

By A. B. Bates.

To the President of the Agricultural Society:

Charged with James Makee, Z. Kaauwai, A. Adams, and Wm. Ap Jones, as a Committee on "Kalo and Garden Vegetables" with the duty of reporting to the Society, the undersigned, without having had an opportunity to confer with any of his associates, would respectfully submit the following observations.

The Kalo, or Taro Plant, so well known to all who are familiar with the diet of the Native Race, has attracted the attention of the casual observer, and its use and culture have been a fruitful subject for the traveler, and all who stand in dread of deleterious miasmas, without any knowledge of the culture of the plant, to comment upon. Descriptions of its form and use, are so often attempted by scribblers for the public press, and the "patches" in which it is grown having been so frequently delineated and denounced, they merit no especial notice of the Society.

While it is acknowledged to be the staple food of nine tenths of the population of the Islands, it matters not whether it merits the praise or condemnation of the few. If properly cultivated and cooked, it is conceded to be a wholesome diet, and one furnished at a cheap cost. That being the fact, the prejudices of those who would dry up the *patches* in which it is grown cannot avail, and kalo in some form will continue to be the food of the people.

How it is to be most successfully cultivated, is then a subject of no little importance.

The Chairman of the Committee upon Kalo, last year reported to the Society, that "when kept under constant cultivation, Kalo patches need never to be fallow, but the seed needs to be changed frequently &c." If it is to be inferred from this statement, that Kalo patches, kept under constant cultivation *without* being supplied with *manure*, need never to lie fallow, I am of the opinion that it is a mistake. Experience teaches that no soil, however rich, can sustain successive crops of any vegetables without exhaustion. Alluvial soils and plains receiving the wash from elevations in their rear, may continue for several years productive, but in the end they refuse to work

without food. Science demonstrates the causes—and the wise cultivator of the soil will forbear making drafts on the future for present comfort, and will not exhaust a virgin soil that it may in old age be unproductive,—and although many of the cultivators of Kalo are ignorant of the laws of nature, and neglect to heed them when they admonish to labor to provide against a future want, there are a few whose observation and prudence have impelled them to make a return to their mother earth for the food she gives them. Wherever in the vicinity of Honolulu a large crop of kalo has been produced, I think upon enquiry it will be ascertained that its cultivation was directed by one who has some knowledge of the process of vegetation, though it may not have been acquired in the schools. The land has been either allowed to remain fallow and the abundant vegetation sustained by it, while so remaining, has not been removed, but incorporated into the soil as decomposed matter, or foreign substances have been supplied to it, which have furnished materials for making up the deficiencies caused by successive crops.

Not from my own experience, but upon the testimony of others, and my observation, I do not hesitate to declare that it is an error to believe that kalo lands "need never to lie fallow." If the proper manure was always accessible and could be applied at cheap cost, it may be true, but not otherwise.

My neighbor, Mr. Livingston, a colored man, who has had a long experience in the cultivation of kalo, called my attention a short time since to a kalo patch on Nuuanu road, upon which he had experimented by the use of the manure from his hog pen, for the want of better, with remarkable success—having only a small supply, he applied it to a portion of his patch by placing it on the hills when he planted the *hulis* (seed) in the ground, and at the time when he directed my attention to the difference of growth of the portion manured and that which had been cultivated in the ordinary way, it was very apparent. He also advised me that the kalo which had been stimulated in its growth, came to maturity three or four months before or in advance of the other, and was of a very superior quality. This is the only instance of applying manure to kalo that has come under my observation, and I regret that the results were not seen by all who cultivate the plant, as I am clearly of the opinion that it will as well

repay the costs to use manure in the cultivation of it, as any other vegetable. I know it is a common opinion that the soil of the islands is inexhaustible, and that manure is not worth cost of saving—but whereever it has been in use in the kalo patches or kula lands its value has been manifested. There is a striking exhibition of its fertilizing effect on a grass plot in Honolulu, where it was deposited in heaps and allowed to remain a while, and afterwards spread over the land—where the manure in a body was permitted to leach, the grass is luxurious and green, while on the remaining portion of the plot it is dwarfed and dingy. Experience, I think, will prove that the laws of nature are uniform, and that the soil of the islands under all circumstances will be benefitted by the application of science to its cultivation and improvement.

How manures are to be most successfully applied upon kalo patches is yet to be learned, but a limited knowledge of their application upon dry land suggest to my mind that the first experimentor lost a large portion of its fertilizing effect. It is known that kalo patches are usually formed upon different grades, and that the water is allowed to run from the higher to the lower, leaving only a supply as it passes. The properties of the manure being soluble, if it is deposited in the upper patch, they will be washed to the lower, and so diffused as to be scarcely perceptible. Should any one therefore feel disposed to experiment on their use, I would suggest that the patch upon which they may be applied should not be made a thoroughfare for a water course, but supplied with water as it may need, allowing the surplus to pass around. In that way the entire fertilizing effect would be realized throughout the single patch, and generally though not equally diffused, in case the manure was not properly distributed.

Garden vegetables as yet have not received the attention of a practical intelligent gardener in this vicinity to my knowledge. Mr. Montgomery who has so often been justly complimented for his liberal expenditnre of money, and for his horticultural taste, has done more perhaps than any other individual to increase the variety and improve the quality of garden vegetables. But his professional duties are incompatible with that attention which is required to make a vegetable garden profitable. He has produced a fine quality of almost all the varieties of culinary plants, but at a cost for which he could not be

remunerated without directing his gardener to sell at a price not within the reach of all. The result has been that a limited market has been found, and a wrong impression has obtained that under no circumstances would a vegetable garden be successful.

I am firmly of the opinion that every man is especially fitted for some particular trade or profession, and that when he steps aside to gratify his taste, or profit thereby, he is liable to be disappointed. A man may be a very good merchant but an unprofitable mechanic—a learned lawyer but an unthrifty gardener—he may not have chosen the occupation or profession suited to his taste, but the habits formed in acquiring his education as a merchant or lawyer are incompatible with the duties that devolve upon a mechanic or horticulturist. A professional man who undertakes to cultivate the soil does it by proxy and gives only his leisure moments to observing what those in his employ have done in his absence. A lawyer would expect but small returns from his office if left in charge of clerks, and he should anticipate no better result from his garden in the hands of unskilful Chinamen or natives, though directed by one possessing the science of horticulture.

It has been demonstrated by Mr. Montgomery, that many of the most desirable culinary vegetables may be successfully grown in the vicinity of Honolulu—and that being the fact if they were cultivated by an interested gardener who could use the spade and hoe, I think he could furnish them at prices that could command a market. My worthy neighbor, Captain Adams, who had almost or quite seen three score and ten years before he devoted his time to his garden, has also successfully cultivated a large variety of vegetables, and merits commendation for his success. But a man who is too old to be a sailor—who has spent the largest portion of his life on the deck of a ship—should not expect to make the cultivation of a vegetable garden profitable in dollars and cents. I hope Captain Adams is receiving a rich reward for the efforts he is making to test the capabilities of Hawaiian soil to produce exotic vegetables, in the feeling that he is proving to others that they can be grown, which may induce the young and experienced gardener to plant and receive a compensation for his labor.

Though it has been assumed as true that a garden cannot be made profitable, I am not yet ready to yield to that opinion.

While garden seeds are exorbitantly high, and no practical gardener is in the kingdom willing to work with his hands, with the experience of Mr. Montgomery and Captain Adams, that all desirable variety of vegetables may be grown, I think it should not be conceded that garden vegetables cannot be profitably produced, and at prices at which they could be sold.

Would it not be well for the Society to devote a portion of is funds to the importation of garden seeds, as well as improved stock, and could not the influence of the institution be well exerted to induce laboring gardeners to emigrate to Honolulu through some of the corresponding members of the Society. A good garden soil we have—a hungry and liberal community are in want of the variety of vegetables that may be produced, and if the Society can furnish the seeds, and by its influence induce the laborers necessary to plant and cultivate a garden to emigrate to us, I think our market will no longer remain without vegetable stalls.

As I have before said in a report to this Society, the natives are apt scholars in learning how to cultivate the soil, and could we have a good gardener to set them an example, I think they would profit by it. A native who was a neighbor to Mr. Janion (when cultivating by the hands of a foreigner, a garden in Nuuanu Valley) by observation has learned that something besides beans and melons and cucumbers may be cultivated for sale to the foreigners, and I have on several occasions had my table supplied from his garden with various other varieties. One good garden managed and tilled by two or three intelligent foreigners I think would soon find competitors—and could the Society in any way promote its establishment by money or otherwise, I think we should soon see a return for the expenditure.

REPORT ON ARROW-ROOT.

By Wm. Reynolds.

Malu Malu, Kauai, June 1st, 1855.

To the President pro-tem of the Royal Hawaiian Agricultural Society.

It has been very recently and by accident, that I learned I was Chairman of the Committee on Arrow-Root for this year, and I have therefore only the meagre results of my own limited experience to offer as a report.

In May 1854, twenty odd acres of Arrow-Root were planted at this place, in a field just cleared of shooting corn by the cut worm. It was rather late in the season, but nevertheless, the whole planting came up in six weeks, and was carefully weeded until October, after which time the grass was allowed to grow amongst it, as it seemed to require shade.

In January, when the stalks turn yellow, die and fall, and which is the time for digging the crop and manufacturing it, it was evident that there was not yield enough for a harvest, and the field lay over for gathering the next season.

(In reading Mr. Pitman's report for last year, I perceive that he recommends leaving the ground uncleared, and also states, that Arrow-Root will not yield a crop the first year of planting. Before I saw this paper, I attributed the small growth here, to the lateness of the period of planting.)

In May the stalks shoot out again, from the tubes left in the ground; and the appearance of these, in the field among the grass was earlier, and their growth is now more thriving than that of some in the garden, which has been kept weeded and clean.

That Arrow-Root is a profitable crop to raise upon these Islands, I have no doubt. It has no insect enemies to prey upon it; so far as my knowledge and inquiries go. Cattle will not feed upon the stalks, nor will hogs, or cats, or mice touch the root. The natives understand the planting, gathering and manufacture of it, and all these operations require but a small outlay.

There is always a demand for the pure article in New York, and so limited is the supply that adulteration is largely practiced in first hands. Genuine Arrow-Root can hardly be found in the interior towns

of the United States. The Bermuda root obtains the preference and commands a high price.

We have made here for our own use, from the mountain growth, as finely flavored fecula as the best Bermuda or Florida Arrow-Root affords, both of which I have had the opportunity of testing upon the spot. I am therefore of opinion that with proper care and cleanliness in the preparation, packing and shipment of the Hawaiian articles, it will compete successfully with any other in the market.

The root is also cultivated extensively and successfully upon the Island of St. Vincent, where every precaution is taken to produce a soft and pure fecula. Well adapted machinery for crushing and straining; hot houses for drying, arranged with railways and cars to run the drying pans out in the sun, and in again, under the glazed roof, in case of rain; the pans covered with white gauze to keep out dust and insects; german silver implements for skimming and packing, to avoid all contact of the hands; clean barrels or tin boxes, lined with white paper, which is attached with Arrow-Root paste for containers, are among the means adapted to ensure purity in the manufacture. Finally, in shipping the packages to England they are never allowed to go in the hold or to be stowed near sugar, or any other freights, which might injure the contents effluvia. Perhaps not one of these conditions has ever been complied with in Hawaii.

Arrow-Root, as a nutritious diet, ranks high among all the varieties of food used by man. Liebig places this in a remarkable point of view, when he states "that 15 pounds of flesh contain no more carbon for supplying animal heat by its combustion, into carbonic acid in the system, than 4 pounds of starch; and that if a savage with one animal and an equal weight of starch, could maintain life and health for a certain number of days, he would be compelled if confined to flesh alone, in order to procure the carbon necessary for respiration, during the same time, to consume *five* such animals."

Respectfully submitted.

REPORT ON INDIAN CORN.

By. J. S. Emerson.

Gentlemen of the Royal Hawaiian Agricultural Society:

Not having seen a copy of the transactions of our Society for the past year till within a very few days, nor of my appointment on the committee on Indian Corn, I have directed no special attention to the subject during the past season; and therefore can make only a few observations such as common experience may suggest.

In the cultivation of corn at these Islands, there is one thing that may be considered settled, viz., Time it right and a good crop may be expected in any situation adapted to its growth. But as the time for planting varies in different localities, and in many, must be varied to suit the rainy season whenever it may come, experience will be needed to guide in the matter. In some places the salt spray will ruin the crop if planted too early, in others the worms will take it, if planted too late; in others still the corn will be likely to be inundated if planted early and drains are not made adequate to let off the superfluous water; again, worms, caterpillars, or drought stand ready, in most places, to ruin the crop, if planted too late. To avoid all these evils the cultivator of Indian corn must study his locality with care to guard against the particular evils to which he is there exposed. In localities where there is a sufficient degree of moisture in the soil the year round to vegetate and mature the crop, the season when winds from the sea, and worms do not prevail is the time to plant corn. This on the windward side of Oahu is from March to May usually.

But in Waialua corn planted later than March will rarely come to maturity; if it escapes worms and caterpillars it will be likely to be destroyed by lice or by excessive heat. The past winter 20 or 30 acres were planted in the month of December, but, being low and flat, and not drained, nearly the whole was destroyed by floods and standing water. Between the month of January and March the almost continued rains prevented any possibility of cultivating our flat lands; sandy soils, or sloping hill sides only would admit of being worked to advantage. The experience of the past season leads to the conclusion that all our flat lands intended for cultivation should be well drained, so as to allow no standing water.

Very much land, which is now mirey in the winter and baked and

cracked in the summer, if well drained and deeply ploughed would be very productive soil ; but, at the present time, it produces nothing but moss or a small kind of rush. If we would raise corn on such land, deep draining and deep ploughing and early planting—say in December or January, are requisite for Waialua—as we here are not as subject to injurious winds and salt spray as they are on the Koolau coast.

The grub worm and the caterpillar, which are our great pests, do not appear to diminish by continued cultivation of the soil. The writer has two enclosures almost adjoining each other ; the one of which has been planted 7 or 8 years, and generally with corn, and always with good success ; the other of these enclosures after the first crop has been uniformly cut off by the worms and caterpillars—has frequently been planted during the season, but without success. The reason why the worms take the crop from one of these enclosures and leave it on the other is a mystery yet to be explained.

He who will invent any practicable method of destroying these vermin, or of circumventing them will be a great benefactor to the corn grower as well as to the corn consumer. If a crop could be safely depended upon, and there were no fear of worms or vermin, the article could be afforded at half its present price in the market.

In this age of wonderful inventions can not a practicable method be discovered of destroying these animals, our greatest enemy in almost every branch of agriculture at these Islands ? I would suggest that a standing premium of $500 be offered, to be awarded by the officers of the Society to any one, in any country, so soon as he shall demonstrate a feasible and effectual method of destroying these animals, or their influence for one year on a given piece of land, say one acre or more.

REPORT ON POULTRY.

By Wm. Ladd.

Your Committee would respectfully report, as the result of their efforts, a communication from H. W. Fairbanks Esq.

Montrose Place, June 8th, 1855.

Wm. Ladd Esq. My Dear Sir:

In answer to your enquiries a few days since while visiting my poultry yard relative to the best method of treating fowls that they may be profitable, I gladly give you all the information that I am possessed of after so limited an experience as I have had.

First,—The Construction of the Houses.

My stock consists of about one hundred laying hens, and which I now keep in four separate apartments three of which are nineteen feet in length by sixteen in breadth, and six and one half feet high, and in each of which I keep fifteen laying hens with one cock. The fourth house is more than double the size of the others, but I intend to divide it into smaller apartments. My short experience teaches me that hens lay better, and are more healthy living in *families* of ten to fifteen, with but one recognized *head* of the household than in *communities* with several heads who are constantly waging war with each other for the supremacy, thus disturbing the female portion of the family in the enjoyment of their *necessary* rights and privileges, and destroying the *practical* operations of the Fourier or social system so far as chickens are concerned.

The best plan for nests are boxes arranged upon the side of the coop about three feet from the ground, and so large that the hen may hide himself from the *public gaze* while producing the desired egg. My houses are constructed of lathes and pickets, except over the nests and roosts, which are protected from the rain by a shingled and boarded roof.

Second,—Their Food.

In the morning I give them wheat, wash out their water tubs, and keep a good supply of water in them throughout the day, and occasionally add a little powdered lime. At nine or ten o'clock I give them melons or ripe cucumbers cut fine. At noon their food is corn meal and water, and once or twice per week add a little black pepper. Late in the afternoon I give them the swill from the kitchen which has accumulated within the past twenty four hours.

Their nests are cleaned once a week, as well as their houses, and I give them a plenty of grass, gravel and fresh beef.

THIRDLY,—SITTING HENS.

Many persons have asked me "what do you do with your hens who have a strong desire to become mothers?" For that class of *unfortunates* I have a separate apartment, and when the hen makes her wishes known by deliberately remaining upon her nest an unreasonable time, I cause her to be removed to the "prison," keep a supply of water by her side, give her one feed in the morning and leave her the balance of the twenty-four hours to her own unhappy meditation. Most likely in ten days she will overcome her former desires, and be ready to return to her house again to resume her former duties.

To those favored ones who are chosen to be the honored instruments of adding to the desired population of the chicken world, I assign a separate house for *their* three weeks probation.

FOURTH,—YOUNG CHICKENS.

Having been unsuccessful in a prior attempt to raise the desirable article, owing to a great abundance of cats and rats, I have now constructed a house of the size of the first named, and which is boarded tight about three feet from the ground all around, the object being to prevent the chickens from coming out, and cats and rats from going in. The upper part of the walls are of laths one half-inch apart, and the top of pickets, perhaps two inches apart, thus giving light and air. Within, arranged around the walls each mother has her separate apartment with her "darlings," the mother being confined to her room, while the youngsters are allowed to run at large. Having had this operation but about ten days, I cannot give the result, but at the last report from the "nursery," both the "mother and children" were doing "as well" "as could be expected."

As to the prospects of the establishment in February, March and April, I found that with eggs at 50 cents per dozen, and wheat 2 cents per lb., my fowls netted me $30 per month, and in my opinion that will be about the average for the year—at the present time they are not doing quite as well, but the increase of price for eggs and chickens during the shipping season, will quite make up the average as stated above.

Respectfully your's,

H. W. FAIRBANKS.

The following facts derived from the Report of the late "National Poultry Show," held in the City of New York, will be found interesting, if not useful :

INFORMATION ABOUT POULTRY.

At the late Annual National Poultry Show at New York, the following conversation occurred between Exhibitors. The facts are interesting, and may be useful to many of our readers :—

Mr. Robinson spoke of the great improvement that had taken place in the appearance of the poultry shown since the last show—in fact, the first premiums have been awarded to chickens of the premium fowls of last year. It is really gratifying, said he, to think that the great, long-legged, awkward Shanghais that were first imported, have been improved by careful breeding into a very snug, well-shaped breed, many of which will weigh over ten pounds. There is no telling what may yet be made of our domestic poultry, if men continue to be encouraged in the march of improvement by such exhibitions and liberal premiums as are given by the National Poultry Society, which is doing incalculable good, for it fosters a hitherto neglected branch of American industry, which adds much to the happiness of the most helpless portion of the family—the women and children. Mr. R. said that the increase in the poultry trade of this City was surprising—it never had been as large as this winter. A single commission-house (Miller and Having) have been selling twenty-five tons a week all the season ; and this is only one of many in the trade.

Mr. Platt, of Albany, said he found pure breed Shanghais, when well fatted, as good as any breed whatever for the table. It is common to see spring chickens now, in the fall market, weighing 4 and 5 lbs. each. The Chairman says we sell poultry by the ton ; it is an object then to have those that make weight.

Mr. North, of New-Haven—the Chairman spoke of the benefits of poultry raising to the household. Yes, chickens and children are always associated, and I have no doubt that many a boy might have his mind so engaged by a present of a pair of fowls, that it would lead him into habits of industry and self-reliance. I thus raised funds for my education. I raised the first season 149 chickens and 46 turkeys, paying all expenses and laying a nest-egg in the savings' bank. It

elevates and improves the character of a child to own and have the care of fowls. I sold, last season, the eggs of one hen at a shilling each, to the amount of $64. Poultry-raising is good for the mind and the purse.

Mr. Wilcox, of Ohio, asked if a cross of Shanghai and Dorking would be an improvement.

Mr. McCormick—I do not approve of crossing one variety upon another. The Shanghais are the toughest chickens to raise of any I have ever tried. A cross upon common fowls will improve the chickens, pure blood should be kept as breeders.

Mr. Johnson (of Paterson)—It is objected that Shanghais eat largely. So they must, to grow so large. Our Jersey farmers have mixed Shanghais with common fowls, and the result is, they never had so many tons of poultry to send to this market in any year as this. I like a variety of sorts, but would not cross them. I have a Golden Hamburg hen that laid eggs enough to average six a week from February to October. The combs of this variety are very large and handsome, and they will not freeze if you have a good place for them. I like a shed open to the South for day time. I like these remarks we hear at this meeting--they may encourage others as I have been encouraged. I make money. I gave $30 for a pair and sold eggs enough at 12½c. to pay cost and get a good stock in one season. I have twenty-seven varieties.

Mr. North—I had a Hamburg hen that laid every day from Feb. to October. They are a good kind. They were formerly called English Red-top. I built a cellar, with a glass roof, and good ventilation, for my hens at a cost of $300, and it pays well. I get eggs all winter. I feed my fowls in part with carrots chopped fine and mixed with meal or other food. I never saw anything so good to make them look healthy and lay freely, as carrots. I wish the advantage of using such food for fowls could be universally known.

The Chairman—The reason that carrots are good for laying hens is, that chemically considered, they contain more of the substance necessary to form eggs, than any other food. They are nutritius for man, beast or fowl. One bushel of carrots contains more food than a hundred cart loads of turnips. Mr. North says they are 28 cents a

bushel in Connecticut. Here the poor pay $2 50 a bushel for potatoes. If it was only fashionable to eat carrots, how much more nutriment they would get for less money. Carrots are exceedingly valuable used in soup. Fowls should always be fed with vegetables in winter. I am glad to hear that carrots prove so valuable.

Mr. Case, of Jamaica—I would raise Shanghais if for nothing else, just to hear them crow. But I find the hens are the greatest layers of any sort I have ever seen.

Mr. Long, of Morrisania—A Shanghai hen hatched four chickens, and soon began to lay, and after a time began to set, the four chickens setting with her. She hatched 14 or 15 eggs, and both broods ran together, and in a short time commenced laying again, keeping us in eggs while raising her broods.

Henry Betts, of Wallingford—I have bred Golden Hamburgs 22 years. I find no difficulty in raising them, and they are more ornamental on a place than Shanghais, and as good layers. I got 203 eggs from one hen in ten months.

The Chairman said that the cheapest ornaments of a rural place are birds; not only useful laying birds, but such beautiful fancy birds as are to be seen in this exhibition. A variety of birds upon a place enlivens it and gives pleasure to all who behold them. Show me a man that hates the sight of domestic poultry upon his premises, and you need go no further to find a man who does not love women and children.

Mr. Johnson recommended raw onions and cabbage to fowls in winter to promote health.

Another gentleman recommended lard scraps and pounded oyster shells. He finds a cross of Dorking and Malay fowls a very good sort. They weighed, dressed, 14 lbs. a pair. Some of his hens had laid two eggs a day.

Mr. Platt—I would rather burn the oyster-shells. Lime is indispensable. Hens cannot make egg-shells without it. I am pleased to hear the subject broached of the value of birds for ornamental purposes. There are birds here that would adorn a palace.

The Secretary—I hope we shall be able next year to fill the Crystal Palace with a show of such fine birds as fills the great halls of this

Museum. In conclusion, Mr. Chairman, I move a vote of thanks from all the members of the National Poultry Society to P. T. Barnum, the President, for the interest he has taken to promote our successful exhibitions, and foster improvements in domestic poultry throughout America, by calling the attention of multitudes to its importance that otherwise might have never thought upon the subject.

It has been recommended by some experimentalists to keep laying hens constantly shut up, and entirely separated from the male.

For under such circumstances they will produce a much larger number of eggs, and will not have any disposition to set.

Lime sprinkled occasionally on the nests, particularly when the hen is about to set, will prevent all injury from vermin.

Respectfully submitted.

REPORT ON FLOWERS.

By W. Hillebrand, M.D.

The cultivation of flowers and ornamental plants in general has, during the past year, made a steady, though perhaps little noticed, progress. A considerable number of new plants has been introduced while the circle of amateurs of this special branch is extending in the same measure, as our foreign population is increasing, and the idea of making their abode here a permanent one, is gaining ground amongst them. A flower-garden is so intimately associated with the idea of home, that in the minds of many the latter can hardly be thought of without the accompaniment of the former. A mighty stimulus to the cultivation of our gardens has been lately given in Honolulu by the act of the authorities granting the supply of water from the government works to private individuals. Henceforth it is to be hoped, that the many arid grounds round the habitations of our citizens will soon be filled with fresh verdure and fragrant flowers, for under our blessed sky it hardly requires anything but moisture to make even a poor soil yield what you please. Besides, manure is abundant. It might be well for us if those grounds were employed in the indicated manner, instead of being crammed with a motley

assemblage of small low huts and shanties, unfit by human beings, to be inhabited for any length of time without detriment to their health, and attended with all the obligate accumulation of filth and dirt, which promise, before long, to engender a host of diseases that will soon do away with Honolulu's great reputation for salubrity. Whoever believes I exaggerate, is requested to take a walk through our streets during a calm summer-night, when he is not likely to be affected with a catarrh of his nostrils. But against the ferocious god of the dollar it is in vain to preach. We have been promised a city charter. May the city fathers in embryo keep their eyes and noses open! A few stringent regulations will not be out of place. I have perhaps strayed from my theme, which was on flowers, but allow me for this time to speak of fragrance and stench in one breath, for I mean to expel the latter by the former.

I would avail myself of this opportunity to throw out a few remarks with regard to the improvement of this special and other cognate branches of our society. The introduction of new plants, ornamental as well as useful ones, is a most important object. Our climate is peculiarly favorable to the development of all the productions of tropical and of most temperate latitudes. Numbers of cereals, oil-producing plants, fruit-trees, garden-vegetables, pasture-plants, which might be cultivated to great advantage, do not exist here yet. A particular committee of our society, composed of individuals who take a real interest in its subject should be intrusted with its furtherance. Government could lend its aid by instructing the King's Commissioners in different parts of the world, to send from time to time seeds of the useful and ornamental productions of the countries where they reside. Likewise, I feel assured, the representatives of foreign nations would, with pleasure, express to the commanders of national vessels cruising in the Pacific and Eastern seas, who have to touch here occasionally, the obligation they would lay us under by collecting in intermediate ports what might be useful to us. Private individuals might invite their correspondents to contribute a mite. To mention only one instance amongst many: the bananas growing on our islands are (with exception of two lately introduced from Tahiti) only of two kinds, and these very poor ones, while both Continents, East and West, and island groups South,

abound with varieties of the choicest kinds, with the delicious fruits of which ours can hardly compare. How is it that the plantain of the West Indies and Central America, on which hundred thousands of human beings rely as almost their sole food, is not yet seen here? But the most efficient way of all would be, to place us in a situation where we can offer equivalents for what we receive. And this might be effected by an institution, which in so many respects would prove useful and interesting—I mean a botanical garden—which would collect in a limited space the productions of our islands and other countries. Our island flora, although not as rich as that of most other tropical countries, yet possesses the great charm of novelty. Only a few scattered species of Hawaiian plants are found in the richest botanical gardens of Europe and America. In all of them there exists a great desire to make acquisitions from this quarter, and they would undoubtedly make compensation in the most liberal manner. If this garden at the same time were managed as a nursery, where useful new importations be first deposited, tried and studied, and from which they would be distributed gratis and with proper instructions, to the population, it would become a source of great benefit. Besides, such an institution would raise our credit abroad, and throw a lustre upon the government under which it originates, for it is only in highly civilized nations that science is fostered systematically. It would be superfluous to bring into account the gratification, which a park-like garden, filled with flowers and rare trees, open to the public at certain hours of the day, would offer to our citizens, and before all, our ladies. Is our government so poor that it cannot devote a few acres of its many waste lands to the purpose of a botanical garden? is there not plenty of water round Honolulu to irrigate it with facility? and are there not constantly prisoners in the fort who could do the necessary work there in the most economical way? Perhaps it would not be difficult to find in our number a gardener who willingly would take the establishment under his care, even without salary, if the difficulty should lay here.

The British Government has erected botanical gardens in nearly all its colonies, estimating justly their great importance in raising the agricultural resources.

In the meanwhile your humble reporter has taken upon himself to execute, on a limited scale, the idea just thrown out. Owing to the mediation of a highly esteemed friend, he has been placed in correspondence with the great botanical gardens of Paris and Rio Janerio, from both of which he expects annual remittances of seeds, in return for which he has to supply them with the productions of our islands. As he considers a private transaction of this kind of greater than individual interest, he would avail himself of this opportunity to make an appeal to such of our country residents and farmers who take an interest in the advancement of agriculture and horticulture, to send him from time to time ripe seeds of plants growing in their neighbourhood, if possible, with the native names. Those from the mountains and recesses of the valleys are most desired. Every remittance of this kind will be compensated by a parcel of new foreign seeds, either useful or ornamental, according to option.

In conclusion, I would suggest the propriety of lining the principal streets in and near Honolulu with fine shade trees. As to Nuuanu road I should recommend to beset its sides with representatives of all large shade and timber trees, which are found on our islands. The high winds, sweeping over said road, would, it must be admitted, prove a great obstacle in the beginning—but, I imagine, their force could, in a great measure, be broken by setting out at the commencement from distance to distance some hardy-growing tree, as the hau or fig, which would afford a shelter to the tender ones, and might be removed subsequently, after having performed its office. There is abundance of water, and the growth of the trees, it is to be hoped, would be rapid. King-street is broad and hot enough to be benefitted for appearance and comfort's sake. The same holds good of other streets. Another consideration of importance should urge us to make a quick beginning. The succulent branches of a living tree are an effective barrier to the spread of fire.

REPORT ON LABOR AND POPULATION.

By W. Hillebrand, M.D.

Gentlemen :—It is a matter of regret to me, that on a subject of such importance as that of the present committee, I have been left alone to a task, for which every one of my fellow-members would, from their greater experience, have been better qualified. The name of your committee is, "on Labor and Population." As far as I understand it from the juxta-position of these two great elements of agricultural interests, you want me to speak of the latter in its bearing on the former. Otherwise, the subject would become too wide and extensive and appear out of place.

The sources of labor, which present themselves to our farmers and planters are first and principally our native population. Up to a few years ago it was their only dependence, their only means. It was found insufficient, as was attested by the general complaints of agriculturists, and fully borne out by the neglect of some and the abandonment and total ruin of other estates, some of them after their beginning, others after having been raised by dint of individual perseverance and outlay of capital to a degree, where they soon would have supported themselves, if the unmeasuredly rising wages had not proved a tub of the Danaides to the despairing planter. Whence this great distress? The causes are too well known, have been too often and ably discussed here in your society and elsewhere. I almost fear to be accused of trueisms, and still I deem it my duty to bring some of them up again, and if it were only, to consider from a new point of view, the object plainly conspicuous to all.

Foremost of all, stands the scarcity of our population. The Hawaiian nation, which, 70 years ago was estimated variously at from 200,000 to 400,000, now only counts 72,000, a decrease within this period of at least 2-3. Vast tracts of land do not harbor a human soul; fertile kalo lands, once under cultivation, are left to the rule of grass and weeds. The island of Kauai, remarkable for the productiveness of its soil and capable to sustain a population of at least 100,000, contains only 6000. It is not to cruel and devastating wars that we have to attribute this unparalleled falling off in so short a time. The wars of Kamehameha I., however energetic they were

carried on, cannot in the remotest degree be compared, so far as waste of life is concerned, with those of modern civilized nations. And it is after those wars, moreover after the blessings of civilization were transfered hither, that the blight falls most mercilessly on this doomed people. The cause of the evil is an internal one, not caused but increased by external influences. Its investigation resolves itself naturally into these two questions ; the scarcity of births and the frequency of deaths.

What is the cause of the rapid increase of other more favored nations ? Few will deny, that it is a result of that great moral and social institution—called family. In proportion as the family is held sacred and inviolate, the numbers, the strength and wealth of a nation will increase. It is not only a moderator and director to human inclinations, engendering and fostering the brightest inspirations of the human soul, love and charity, restraining passion, and steadying the aim of life, but a most useful stimulant to parents, in straining their activity to provide for the future of themselves and their offspring. Fertility and health accompanying it. How does the family stand with the people ? I fear, with the great majority it is an empty word—I am not sure, if they have a word for it at all. Conjugal and filial love are only faintly developed in consequence. The degraded state of woman in their ancient institutions certainly lays at the bottom of this great defect, and unfortunately the first contact with white men did anything, but shake their primeval ideas. That class of people who first came amongst them, be it transitorily or permanently, being, with few honorable exceptions, of the lowest class, did their best, still more to pervert the moral depravity, christianity has certainly mended the evil, but you will all agree that its agency, up to their time, is far from having accomplished its end. I do not hesitate to say, that marriage with most is lttle more than a formality, that sincere conjugal attachment is only cultivated by few, and that the word "home" is hardly understood by any of them. Laciviousness is the order of the day, disease and sterility follow in its wake ; children are considered a burthen by too many. But is there no remedy against this canker ? Shall such a state of things continue until the last scion of this interesting race is swept away ? Teaching

by school and pulpit has been exercised now thirty years and more, and, although I imagine that, combined with a practical detailed and persevering surveillance on the part of the spiritual leaders, more might be effected, yet of itself alone it is insufficient.

The corner-stone of the fine temple "family" is, in my opinion, a homestead. The family is exclusive, it has a tendency to concentrate itself, to seclude itself from the community. If you want to create a family, call into existence the conditions under which it will thrive, and you may be sure that, when the grain is sown, it will grow. Give your native a homestead and bind him to it, give it to him restrictively, under certain conditions, which will not allow him to leave it for any length of time or to alienate it. Make these conditions of a kind that they will confer a real, a permanent benefit on him, and he will soon learn to appreciate them. In this place I cannot but reclaim from the abuse, superficial modern philosophising and theorising has heaped upon it, an institution of by-gone ages—I mean feudalism. Feudalism fixed the tenant to his ground by obliging him to yield a portion of its products to the landlord, it bound him to till the soil—attaching it to his family by descent, it prevented him from squandering it. It was the best stepping-stone from barbarism to the free institutions of civilization, eminently calculated to change the savage propensities of roving and warfaring tribes to the settled habits of an agricultural people. Together with the moral principles of christianity and the veneration in which woman was held amongst all Germanic nations, it contributed greatly to establish the family on the firm basis, for which they are still remarkable. Feudalism was oppressive when it was exercised by petty nobles ; it was mild where its sway was held by princes or ecclesiastical dignitaries. You have had feudalism here swayed by a number of chiefs, and not influenced by christianity. It was oppressive, tyranical no doubt. And yet, I think it contained a germ for a better state of things. You have abolished it at once, raised the enslaved and oppressed people at once to the full enjoyment of liberty and self-government, which has been the fruit of long protracted struggles to your own nations. Has it been for their better, for their best ? I doubt.

Suppose a different plan had been followed, and what capital op-

portunity offered itself when our late generous king converted all feudal titles in fee simple! Suppose the fealty of the people had been merely shifted, had been transfered from the chiefs to the king, or say rather, to the state, the great community of all! The native would have received his land, not in fee simple, but as inalienable property of himself and descendants under condition that he should constantly keep the whole or part under cultivation, (or it would revert to the fief-holder, the state) and exhibit such either before specially appointed inspectors, or by selling a certain amount to the state (as is the practice with the Dutch in Java)! Would not such an arrangement have secured him a fixed homestead? would it not have trained him to habits of industry and regularity of life? would it not thereby have estranged him to idleness and its concomitant host of vices? would it not, in fine, have created him a family?

This opportunity has passed unimproved, but has it passed irretrievably? I think not. There are immense tracts of lands still in the hands of the state and its principal leaders which lay unproductive, and will lay so for a number of years. It would require only a very moderate degree of abnegation on their part to transfer all superfluity to the still numerous class of landless natives, under conditions like the above-mentioned, and a modest portion of intelligence to perceive that it would turn out to their own profit. True, it would be a step backward in our political reform career, but it behoves a prudent man, when a precipitous race has carried him to the brink of a precipice, to retreat for a while and rest until he has gathered strength enough to leap over it. All precipitation in social advancement is ruinous; the development of mankind effects itself in slow measured steps. That our natives are yet unfit for a free constitutional form of government, I think, is obvious.

I said before, the family is exclusive. It certainly cannot thrive where numerous married couples are housed together under one roof, in one room, only separated by a moveable curtain, and sometimes not even that. It cannot fail that such circumstances will prove a hot-bed of vice and licenciousness—that it will infect for life the tender soul of the innocent child. But such is the rule in and round Honolulu. Has the state no right to do away with such a mischievous state of things? can it not enforce the separation of married

couples ? since, if principles of liberty, personal rights, etc., should stand in the way it would be better to throw them over board at once.

Another question : Has the state no right to remove women who repair to the large seaports with the evident and avowed intention to make their living by prostitution, nay, horribile dictu, are even sent there for this purpose by parents and husbands—has it no right to send them back from whence they came ? A salutary law to this effect has been proposed for years in succession, and constantly defeated by the ostensible plea of infringement on personal rights. Now there is to a philanthropic mind only one alternative, either openly tolerate prostitution and control it, and try thereby to lessen as much as possible the great evils flowing from it, or endeavor to suppress it—take up every prostitute, send her to a house of correction, or remove her from the sphere of her activity—that is, from cities. Not to acknowledge and yet tolerate it, is certainly the worst course to be taken. To hunt up and expose to the public eye their trespasses is highly demoralising, to convert them into a source of public revenue is abominable, is disgusting. A vagrancy law, like the one proposed by Mr. Wyllie, turning away from the seaports any one who cannot show that he earns his living in an honest manner would have another salutary effect in removing those many male idlers who might be useful at home, and are a burthen here to their more industrious friends, on the products of whose labor they feed.

Before this I alluded to the sterility of native women as a consequence of their libidinous habits. A kindred cause of the decrease of the population is the frequent occurrence of abortion and still-born children. In a great measure this evil emanates from the same source as sterility, the diseased taint of the mother being imparted to the fruit, and dooming it to destruction either before or shortly after birth. But this is not the sole cause. The state of pregnancy is feared and hated by too many women, as debarring them from the pursuit of their pleasures and, besides, the care of tending and nursing an infant is so onerous, that it should be avoided at any rate. I am informed that there exists a class of old hags who make it a regular business to administer relief to fair applicants in this line, often at the expense of their lives. From my own experience I can

assert that the baneful influence of horse-riding on gestation is so well known as always to be resorted to as the first expedient. Many old residents even maintain that infanticide is a common practice. Has our criminal code no provisions against these homicidal abuses? If it has, have measures been taken to bring them to the notice of the natives, who certainly have only a faint consciousness of the sinfulness of these proceedings. Likewise have the mothers been instructed by writing and word in sound hygienic principles of treatment of their infants, for ignorance and disregard of these prove almost as pernicious as the former causes. Whoever sees a tender babe of a few months fed on the coarse food of adults, and unprotected from the vicissitudes of the atmosphere, even while under actual sickness, will acknowledge the importance of my recommendation.

Finally, do not delay the erection of hospitals for the sick any longer. Humanity demands it imperativly. The native who falls sick is left to chance and the efforts of his own nature, and too often he is even deprived of the benefit of the latter by the mischievous interference of native doctors. Even when he falls under the hands of a regular physician, so many obstacles present themselves in the way of faulty habits, bad food and dwelling, want of proper nursing, impossibility of applying many remedial agents, prejudice, etc., that the endeavors of the latter are only too often rendered fruitless. A hospital would remove these obstacles at one sweep: a great saving of life must be the result. But, if you erect hospitals, make them so as to answer the purpose, do not from the beginning stifle the institution by half doings, by treating it as a financial operation. Locate them in salubrious and pleasant situations where there is a good supply of water—surround them with fine trees and shrubs so as to render them attractive—appoint proper officers who understand the habits and language of the natives, and possess their confidence, allow the inmates to follow their accustomed habits so far as it does not conflict with order and cleanliness. With such qualities these houses will be eagerly sought after by the sick natives in spite of prejudice, if any exist. I, for my part, have always found that the native is anxious to obtain medicine from a foreign physician whenever he can have it gratis.

In connexion with hospitals allow me to recommend another measure, the utility of which is eminently proved by the experience made in the larger cities of Continental Europe—the control, if not of prostitution, at least of its child, syphilis. There is probably no place on earth where this disease is so wide spread as here. It is no random assertion, but one based on experience and approximative calculation, that in 10 natives 9 have been infected with this disease at one time or another of their life. Happily the disease does not produce as great ravages here as it does in northern climates, or this nation might have ceased to exist before this. But, as it is, its effects are fearful. If not immediately, certainly by its mediate consequences on the general system which, contaminated and enfeebled, is no longer able to resist any other accidently supervening disease, it is the cause of hundreds of deaths annually. Now there is hardly a disease in the whole dominion of Pathology, which is so accessible to treatment as this—even its most aggravated forms are amenable to cure or great amendment. If, in addition to this, you consider that one constitutional taint, if left to itself, will steadily become worse and worse, and pass over from parent to child, you will conceive the importance of some measure to arrest its progress. The remedy consists simply in the obligation of every infected person to submit to medical treatment. A special ward in the hospital, a general dispensary, a few police regulations and the co-operation of the police force are all the necessary machinery. Regular attendance at the dispensary or confinement in the ward has to be enforced until cure is effected. The natural feeling of revenge of an infected person against those who conferred the disease, and the absence of all shame with regard to it in Hawaii nei, where no stigma is attached to it, will render the execution of the plan comparatively easy. Of course the obnoxious moekolohe law has to be abrogated before any practical benefit can be expected from the measure—and if only half the ingenuity exerted by the native police in ferreting out moekolohe were applied in the new indicated direction, they would, if not more respectable, certainly become infinitely more useful. In Berlin, statistics show that control of prostitution has, in one year, dismissed syphilis in the army by one-fourth, and generally by one-fifth. Here we might reasonably anticipate still greater results.

Gentlemen, I have detained you so long with treating the question of the decline of the native population, and my ideas for remedying it, because this subject is most familiar to me, and has for some time attracted my attention. It is, in my opinion, the most important part of the subject of your Committee, as the natives will, for a long time, have to be looked upon as the principal source of labor and agricultural production. Any attempt to increase this source and make it more available, must therefore be of vital interest to our agriculturists. Our natives possess a sturdy, vigorous frame, great muscular power, and can endure hunger and thirst for a great length of time. They pass for indolent, and certainly are so. But are they so from innate character, or by habit. The many instances of industrious and thriving men amongst them do not justify us in saying that they cannot be laborious. As seamen they are eagerly looked for by captains of whale-ships, and I never have heard that they are complained of, when on board, as being idle and lazy. On the contrary, they are liked for their docility and obedience. If they are indolent therefore, they are so from bad habit, from want of necessity and stimulus. These can be removed and supplied.

It is to be feared that the tendency to a standing military establishment, which has sprung up of late, will make the want of labor still greater. Many hundreds of useful hands are thereby made unavailable ; the militia law even goes so far as to take the whole working male population from their fields one day every month. And it cannot be asserted in favor of our military institution, that it will train the young men to habits of order and accuracy, for old and young are taken indiscriminately, and the way in which the concern is carried on is little calculated to work this way. Besides, a soldier's life in peace is considered everywhere as a school of idleness. It seems singular that we, who have no neighbors but the mighty nations of the ocean, with whom we cannot compete, and whose own interests and jealousies prompt them to maintain our independence, should burthen ourselves with an expensive military establishment. Against pirates the satisfaction of the white population with our Government is a sufficient guarantee ; annexation—fillibusters—if there really have been any prospecting—were called into existence by the vacillating conduct of the Government itself, and at all events, would find their suffi-

cient counterpoise in the treaty stipulations of the three maritime nations. A great inconvenience in the employment of natives is felt from their instability and fickleness. When you take a native in service to day, he may leave before the week is out, if he pleases. In Germany it is a general rule for servants to bind themselves for six months. How far anything may be done here, I leave to those practically versed with these matters.

One word with regard to Chinese coolies. As the case stands at present, they are a real benefit to the planters and foreigners in general, and will remain indispensable for a long time. As house servants they are particularly valuable. But it is a question, whether their constant increase in this country is not fraught with evil. Their moral degredation, thievish propensities and turbulence render them an undesirable admixture to the social stock of our islands. The Chinese never amalgamates with other races ; but, like the Jew, retains his national habits and characteristics. He imparts more than he accepts. So long as no females of their own race migrate hither, the evil may be considered remediable, and perhaps it may be asserted, in their favor, that their intermixture with Hawaiians will impart to these some of their industrious habits. But it is a fact that, wherever they have been allowed to accumulate in large numbers out of their country, they have been productive of mischief. On the Philipine Islands they have repeatedly started bloody rebellions and wholesale massacres, while the white inhabitants of Singapore even now live under constant anxiety and fear of similar occurrences. In March last about 180 more were imported by Mr. Graves, most of them fine and healthy-looking young men, who have given general satisfaction.

The introduction of white laborers from Europe on the same footing as coolies cannot be thought of. But I imagine Government would do well to encourage German immigration. If anything, the dispersion of German farmers and gardeners over the country would be calculated to open the rich sources of its productiveness. Their example of industry on the natives would exert a wholesome stimulus in these. Liberal grants of land and some arrangements for procuring a cheap passage would undoubtedly attract hundreds of industrious men from Germany, where the islands of the Pacific appear in the light of the gardens of the Hesperides. Respectfully submitted.

COMMUNICATION FROM H. M. WHITNEY, ESQ.

Dr. R. W. Wood, President of the Royal Hawaiian Agricultural Society:

SIR:—I beg to suggest to the Society a change in some of the premiums now made, and for that purpose would offer the following resolution for the consideration of the Society:

Resolved, That the sum of Five Hundred Dollars, which this Society receives from the Hawaiian Government, be set apart for five premiums of One Hundred Dollars each to be awarded annually for the following articles of Hawaiian produce.

Indigo—best sample of 100 lbs., $100,00.

Cotton Wool—best sample of 100 lbs., $100,00.

Wool—best, not less than 1000 lbs., $100,00.

Cigars—best, not less than 10,000, $100,00.

Wheat—best and largest produce of 25 acres, $100,00.

All the above to be the produce of the twelve months preceding the day of exhibition. The Society shall not be bound to award the premiums unless there is competition for the same.

I need not stop to urge reasons for the Society's taking some such liberal and decisive steps to foster and encourage the cultivation of these valuable but now almost neglected products of the Islands. The reasons must be apparent to each member. The Society will not be called to award the sums unless there is competition for the same, and when so liberal a standing reward is given it *must* have some effect in inducing attempts to merit them.

The list might be increased by the addition of coffee, sugar, and perhaps articles equally meritorious, but I have only thought best to include those articles which appear to need the assistance of the Societiy, and to the extent of the $500 alluded to.

I remain sir,

Your obedient servant.

Honolulu, June 13th, 1855.

Referred to the Board of Managers for consideration.

NOTES UPON HAWAIIAN INDIGO

By D. Frick, L.L.D., Manufacturing Chemist.

The wild Indigofera of the Island of Oahu belongs to the species called *Indigofera disperma*, which is cultivated in the East Indies and in America. It is among the fifteen members of the Indigo family. The highest and most woody shrub produces less coloring substance than the Indigofera tinctoria, which is chiefly cultivated on St. Domingo, Madagascar, Mauritius, Malabar, &c., but its quality is superior to the latter—and its commercial name is *Guatincala Indigo.* When cultivated, it abandons to the maceration above one-third more of Indigo than there can be obtained from the same plant in its wild condition. Nos. 1 and 2 of our samples may be considered as the best qualities drawn from this plant ; Nos. 3, 4 and 5 are varieties in which the quantity has nearly been doubled, but at the expense of beauty and brightness. The first numbers are generally preferred as a dye for silk, the others are very applicable to cotton and to wool.

This Indigofera disperma seems particularly adapted for cultivation in these Islands on account of its long stalks that keep the head of the plant at a proper distance from the dampness that reigns here for many months, especially about the blossom times of the first crop which is always the richest. A lower plant with a heavy foliage would be exposed to be injured by the continual rains that soak the soil for such a long period of the year ; for even in this sort of Indigofera too much rain reduces the product of Indigo, since the great strength of vegetation in this case is spent upon the wood ; sunshine on the contrary, is a most powerful auxiliary to increase the coloring matters, when the soil, as here, is light and moist during a great part of the year. Usually two crops are obtained in America, in other parts 3 and 4 are cut yearly, but we have not to examine for the present, the question of cultivation, as we will be satisfied for some time to come, to make use of what Providence has so abundantly sown in this archipelago.

Our works established in Nuuanu Valley are for several reasons, not in a favorable locality, above all on account of the sudden winds and showers that stop the progress of our fermenting vats, by lowering the requisite temperature ; these obstacles created a difficulty for ascer-

taining the time to be allowed for the first operation ; we succeeded, however, in obviating it by the means of an instrument to which we gave the name of *Indigometer.*

The proximity to Honolulu of the spot which we have chosen, the fertility of the neighborhood in which we have set up our vats, the abundance of clear water are advantages that we are desirous of retaining, at any cost of additional trouble, and we contemplate erecting by and by, a shed against the excess of the variableness of the weather.

We were happy enough to solve another question which was that of the inequality of the produce, and we can assert now, that in spite of the many causes that tend to prevent the production of a constant superior quality, we have by the assistance of chemistry, adopted fixed rules by which, if we do not always produce the same quantity, we obtain a very satisfactory quality.

Compression and dessication are both operations that require much care, for upon them depend the lightness, the brittleness, and the brightness of the cakes. Our desire to represent at the exposition of the R. H. A. S. a series of sufficient samples of our Indigo has obliged us to hurry our dessicating operation.

The limited scale of our manufacture, and the short time elapsed since the beginning of our manipulations, will not allow us, as yet, to speak with any degree of certitude of the proportions of this pigment obtained from a given quantity of plants, but we trust that our humble ambition will be amply satisfied hereafter with the results of this enterprise, to which we are devoting all the resources of our capacities, our courage and our perseverance ; and we are confident that the example of our efforts will not be lost for the welfare of this country.

Chemical explanation of the difference existing between the five samples produced at the above-named exposition.

No. 1—Indigo, in imitation of the Bengal, obtained by neutralizing all foreign principles in the maceration.

No. 2—Indigo, same as No. 1, but hastened in its dessication.

No. 3—Indigo, similar to the white-coated East Indian, submitted to a double action of oxygen.

No. 4—Indigo, precipitated in conjunction with the yellow and brown coloring matters in the plant.

No. 5—Indigo, from vats disturbed by the variableness of the temperature.

There is a No. 7 representing a specimen of stone-blue paste, in which the coloring principle is also borrowed from our Indigo.

COMMUNICATION FROM MR. HELSTEIN.

MANOA VALLEY, June 11, 1855.

Gentlemen of the Hawaiian Agricultural Society, Honolulu :

At the eleventh hour (not being aware before the night of your annual conference) I beg leave to lay before your honorable body a petition, not on my behalf individally, but, as I suppose, on behalf of the general agricultural interests of this country.

Should my communication lack in detail or logical reasoning, should it be deficient in correctness of style or form, you will forgive the plain farmer.

Allow me to, but briefly, remark on those points which I would respectfully offer to your kind consideration. The lands in these valleys, I have found, are none of them inferior to some of the best bottom lands in the Western states, not only in deepness of soil, but also in richness and what is termed mould. When I, about one year ago, induced by the fine climate and the richness of soil, intended to devote my remaining years to a farmer's life, I was often and repeat edly advised to leave well alone, follow my then business, and abstain from farming, "*because it is no use, the worms will destroy every thing and eat you out and out.*" I resolved to try—I have unceasingly battled with them and waged war against them, with lime and ashes, and soap-suds and coal-tar, and everything destructive, but I must at last assert, that although frequent working and turning over of the land, and keeping the weeds down is of some, and not very little, influence, still the ravages of the worms and insects are fearful. As long as the worm is the master and ruler of every farming enterprise, as long as success or failure depends so to say on the will of those destructive insects, men of fortune and capital will hold back to invest their money in enterprises which are subject to total failure from

insects and worms, the existence of which and their ravages no power, no industry and attention can oppose. It would be too long to enumerate the different species of worms or larvæ, but it is sufficient to state that there exists only one effective and sure remedy against this evil, which increases with every year, increases with every acre of land brought into cultivation, increases with every new species of plant introduced in those islands, every plant calling forth its own particular enemies and gormandisers. There is only one sure, effective, and absolute means to effectually diminish and in coarse of a few years almost to annihilate those small, almost invisible, but insidious and therefore invincible enemies of every agricultural enterprise. Those means are the introduction of birds, such as the sparrow, the bluebird, the wren, the jay, the robin, and even the blackbird and woodpecker. Never mind, let the blackbird eat a grain of corn, 3 or 4, or perhaps a dozen ears, he repays his board a hundredfold. It is only the fool who throws away a dollar to save a dime. It would be preposterous in me to remark on the delights which those feathered songsters would impart not only to mankind, not only to the citizen when he travels to the valleys for a little fresh air, but especially to the farmer, when the rising sun greets him in the field. How still, how cheerless, how silent those beautiful valleys now !

Give us birds ! Gentlemen ! give us birds—those tiny, small, but all powerful protectors of agriculture. Without these, agriculture on thse islands will never rise above insignificance. Despair will follow every enterprise as long as vermin and insects have the mastery over every effort. Agriculture wants protectors ! Give us birds—the most effective—either by legislative enactments and appropriations, or by any other means your honorable body may devise.

Most respectfully, your ob.'t servant.

REPORT OF SELECT COMMITTEE ON THE SUBJECT OF INDIGO.

Your Committee appointed to inquire into the practicability of making Indigo a profitable article of exportation, beg leave to report:

That from inquiries made of Dr. Frick, we find that under the favorable circumstances in which he is acting, Indigo of good quality and of ready sale to certain merchants here, can be made at a reasonable profit. But that if it is required to be carried on in an extensive scale, including the purchase or renting of land, cultivation of the plant, and erection of works, &c., &c., they fear that the very high price of labor, as it is at present, to be procured on the islands would nearly, if not entirely, absorb all the profits.

Many parts of the islands are covered, to a large extent, with the wild Indigo which, if manufactured carefully, either by the owners of the soil or permission was given to others to use it, in the same manner in which Dr. Frick is working, it would be a blessing to the islands to let them eradicate it if possible, and thereby restore many tracts of land to the more profitable purpose of pasturage.

On the whole they are inclined to recommend the encouragement of the manufacture at present as an experiment. the more especially as they are informed that Mr. Green and Messrs. Krull & Moll, and also the agent of the H. H. B. Company have promised to take any amount that may be made at the current price of each quality, believing that it will answer as a good remittance.

They have also ascertained, as far as possible, what the price of *manufacturing only* of the article will be, which appears to be, for the best quality with 24 vats at work 87½ cents per lb., with 50 vats at work 62½ cents per lb., the inferior qualities at a lesser rate.

T. C. B. ROOKE.
JNO. MONTGOMERY.

LIST OF STANDING COMMITTEES FOR 1855-6.

1. On Sugar.—R. W. Wood, E. O. Hall, W. H. Rice, C. R. Bishop, L. L. Torbert.
2. On Coffee.—R. C. Wyllie, B. Pitman, P. Cummings, G. Wundenberg, W. A. Aldrich.
3. On Wheat and Oats.—E. Bailey, J. T. Gower, A. G. Thurston, H. M. Whitney, E. H. Allen.
4. On Grape-Vine.—F. A. Oudinot, G. B. Rowell, R. G. Davis, G. D. Gilman, D. Baldwin.
5. On Vegetables.—J. Montgomery, G. M. Chase, A. P. Everett, H. M. Fairbanks, F. A. Oudinot.
6. On Indigo.—D. Frick, T. C. B. Rooke, S. C. Damon, W. H. Pease, J. W. Marsh.
7. On Arrowroot.—G. P. Judd, J. Hardy, B. Pitman, H. A. Widemann, L. Andrews.
8. On Butter.—E. O. Hall, D. McBryde, B. W. Parker, H. A. Widemann, J. P. Parker.
9. On Tobacco.—W. L. Lee, J. Montgomery, R. W. Wood, M. C. Monsarrat, A. Archer.
10. On Salt.—L. L. Torbert, D. Frick, T. Spencer, W. L. Green, G. P. Judd.
11. On Flour.—C. C. Harris, J. Hardy, E. Bailey, D. M. Weston, A. G. Thurston.
12. On Horticulture.—G. M. Chase, E. P. Bond, E. G. Beckwith, Wm. Ladd, J. Montgomery.
13. On Floriculture.—J. H. Wood, W. Hillebrand, H. M. Whitney, M. Beckwith, C. R. Bishop.
14. On Cattle.—R. Moffitt, G. P. Judd, S. Burbank, J. P. Parker, H. Prendergast.
15. On Horses.—J. I. Dowsett, S. P. Ford, T. Cummins, J. O. Dominis, G. Reiners.
16. On Sheep and Wool.—R. Moffitt, T. Cummins, E. Sparks, J. I. Dowsett, R. W. Wood.
17. On Swine.—L. L. Torbert, H. W. Fairbanks, D. McBride, Wm. Webster, G. Rhodes.
18. On Poultry.—H. M. Whitney, A. B. Bates, L. Smith, P. J. Gulick, W. H. Rice.
19. On Birds and Bees.—A. Bishop, W. Chamberlain, E. P. Bond, R. Armstrong, G. E. Beckwith.
20. On Seasons.—J. S. Emerson, T. C. B. Rooke, W. H. Pease, W. L. Lee, B. Pitman.
21. On Soils.—L. Andrews, W. Webster, W. H. Pease, D. Frick, J. S. Emerson.

22 On MANUFACTURES.—R. A. S. Wood, A. Archer, J. T. Gower, A. G. Thurston, S. N. Castle.

23. On MACHINERY.—R. W. Wood, Wm. Ladd, D. M. Weston, C. C. Harris, W. L. Green.

24. On AGRICULTURAL STATISTICS.—R. Armstrong, J. Bartlett, G. Rhodes, B. Pitman, P. Cummings.

25. On COMMERCIAL STATISTICS.—W. Goodale, B. Pitman, P. Cummings, C. S. Bartow, Geo. Pfluger.

26. On ROADS and INTER-ISLAND NAVIGATION.—R. C. Wyllie, W. Webster, T. Metcalf, L. L. Torbert, H. Prendergast.

27. On LABOR and POPULATION.—W. L. Lee, Lot Kamehameha, G. M. Robertson, W. H. Rice, R. Armstrong.

28. On the CUT-WORM and OTHER INJURIOUS VERMIN.—V. Knudsen, C. B. Andrews, J. W. Smith, W. Hillebrand, J. Montgomery.

LIST OF PREMIUMS

FOR THE ANNUAL SHOW AND FAIR TO BE HELD AT HONOLULU, ON WEDNESDAY, THE 11TH OF JUNE, 1856.

CATTLE.

1 Best imported Bull, Silver Cup or $15.
2 2nd-best " " " " or 10.
3 Best " Cow, " " or 10.
4 2nd-best " " Silver Medal or 8.
5 Best Native Bull " " or 8.
6 2nd-best " " Bronze " or 5.
7 Best Native Cow, Silver " or 8.
8 2nd-best " " Bronze " or 5.
9 Best yoke of Working Oxen, to be exhibited in the yoke, Silver Medal or $8.
10 Best Milch Cow, Silver Medal or $8.
Cow to be kept on grass only.
Time of trial from May 1st to June 1st.
Statement to be furnished containing, 1st—The age and breed of the cow, and time of calving. 2nd—The quantity of milk in weight, and also of butter during the trial. 3rd—At least 10 lbs. of the butter, and the statement to be verified by affidavit of competitor and other persons conversant with the facts.
11 Best Fat Ox over 4 years, Bronze Medal or $5.
12 " " Steer under 4 years " " or 5.
13 " " Cow over 4 " " " or 5.

HORSES.

14 Best Imported Stallion, Silver Cup or $15.
15 2nd-best " ,, ,, ,, or 10.
16 Best " Mare, ,, ,, or 10.
17 2nd-best " ,, Silver Medal or 8.
18 Best Native Stallion, Silver Cup or 10.
19 2nd-best " " Silver Medal or 8.
20 Best " Mare, " " or 8.
21 2nd-best " " Bronze " or 5.
22 Best " 1 year old Stallion, Bronze Medal or $5.
23 " " 1 " " Mare, Book or $3.
24 " " Gelding, Bronze Medal or $5.
25 " pair of Horses, to be exhibited in harness, Silver Cup or $10.

SHEEP.

26 Best Imported Ram, Silver Cup or $10.
27 2nd-best " " Silver Medal or 8.

28 Best 2 imported Ewes, Bronze Medal or $5.
29 2nd-best 2 imported Ewes, Book or $3.
30 Best Native Ram, Bronze Medal or 5.
31 " 2 " Ewes, Book or 3.
32 " 3 " Fleeces, Bronze Medal or $5.

SWINE.

33 Best Imported Boar, Bronze Medal or $5.
34 2nd-best " " Book or 3.
35 Best " Sow, Bronze Medal or 5.
36 2nd-best " " Book or 3.
37 Best lot of pigs under 10 months, Bronze Medal or $5.

POULTRY.

38 Best lot of Poultry owned by exhibitor (statement to be verified by affidavit, Bronze Medal or $5.
39 Best lot of Turkeys, " " or 3.
40 " " of Muscovy Ducks, Book or $3.
41 " " of Geese, Book or 3.

DAIRY.

42 Best lot of Butter made from 5 cows in 30 consecutive days, 20 lbs. of it to be exhibited in wooden or stone containers, Silver Cup or $10.
43 2nd-best ditto ditto ditto, Silver Butter Knife or $5.
44 Best 3 firkins of Butter, 50 lbs. each, Silver Cup or $10.
45 " sample of " 20 lbs. " Bronze Medal or $5.
46 " Cheese, Bronze Medal or $5.

SUGAR AND SYRUP.

47 Best 100 lbs. Muscovado Sugar, an average sample of not less than 15 tons, to be shown by certificate of the competitor and one other person conversant with the facts, Silver Cup or $15.
48 2nd-best do. do. do., Silver Cup or $10.
49 Best 100 lbs. made by any process, Silver Medal or $8.
50 " 10 gallons Syrup, a fair sample of 10 bbls., to be shown by certificate, Silver Medal or $8.

COFFEE.

51 Best 75 lbs. of Coffee, a fair sample of 2000 lbs., Silver Cup or $10.
52 2nd-best 75 lbs. of Coffee, a fair sample of 2000 lbs, Silver Medal or $8.

GRAIN AND SEEDS.

53 Best sample of Wheat, half bushel, Silver Cup or $10.
54 2nd do. " " " " Medal or 8.
55 3rd do. " " " Bronze " or 5.
56 4th do. " " " Book, or 3.
57 Best 20 ears Indian Corn, Bronze Medal or 5.
58 " bushel " " " " or 5.

59 Best half-bushel of Oats, Bronze Medal or $5.
60 " " of Barley, " " or 5.
61 " peck White Beans, " " or 5.
62 " variety of " " " or 5.
63 " sample of newly introduced Grain, valuable to the farmer, Bronze Medal or $5.
64 Best variety of Garden Seeds raised here, Silver Medal or $8.

Field Crops.

65 Best crop of Wheat, not less than 2 acres, or 25 bushels to the acre, Silver Cup or $10.
66 Best crop of Indian Corn, do. do. do., Silver Cup or $10.
67 " " of Barley, " " " " Medal or 8.
68 " " of Oats, " " " " " or 8.
69 " " of White Beans, not less than half an acre, Bronze Medal, or $5.
70 Best crop of Irish Potatoes, not less than 2 acres, Silver Cup or $10.
71 Best half acre of Tobacco, with account of cultivation, Silver Cup or $10.
72 Best half acre of Broom Corn, Bronze Medal or $5.

N.B. Statements must be furnished by applicants for premiums on field crops: 1st—Previous crop, if any, and how manured. 2nd—Quantity of manure on the crop, manner of its application, quantity and kind of seed used. 3rd—Detailed account of expense of cultivation. 4th—A sample of the product must be exhibited. 5th—The land must be measured, and the survey verified by affidavit.

Vegetables.

73 Best and greatest variety of Vegetables raised by Exhibitor, Silver Cup or $10.
74 2nd-best do. do. do. do., Silver Medal or $8.
75 Best Sweet Potatoes, from foreign seed, Silver Medal or $8.
76 " 10 Heads Kalo, Bronze Medal or $5.
77 2nd-best " " Book or $3.
78 Best 12 Stalks Celery, Book or $3.
79 " 12 Heads Cauliflower, Book or $3.
80 " 12 White Table Turnips, " or 3.
81 " 12 Carrots, " or 3.
82 " 6 Table Beets, " or 3.
83 " 12 Radishes, " or 3.
84 " 12 Cucumbers, " or 3.
85 " 12 Parsnips, " or 3.
86 " 6 Heads of Cabbage, " or 3.
87 " 5 " of Lettuce, " or 3.
88 " 12 Tomatoes, " or 3.
89 " Bunch of double Paisley, " or 3.
90 " 3 purple Egg Plants, " or 3.

91 Best 12 Onions, (seedlings) Book or $3.
92 " 3 Squashes, " or 3.
93 Largest Squash or Pumpkin, " or 3.
94 Best bushel of Irish Potatoes, " or 3.
95 " " of Sweet " " or 3.
96 " variety of " " or 3.

FRUITS.

97 Best 12 Peaches, Bronze Medal or $5.
98 2nd-best " Book or 3.
99 Best dish of Grapes, Brnz. Medal or 5.
100 " 12 Turkey Figs, Book or 3.
101 " 12 Figs of any kind " or 3.
102 " 5 Water Melons, Bronze Medal or $5.
103 Largest do., Book or 3.
104 Best 5 Musk Melons, Book or 3.
105 Largest 1 " " or 3.
106 Best 12 Oranges, Bronze Medal or 5.
107 " 6 Lemons, " " or 5.
108 " Bunch Bananas, Book or 3.
109 2nd-best " " " or 2.
110 Best 6 Mangoes, " or 3.
111 " 6 Pine Apples, Bronze Medal or 5.
112 " 6 Chirimoyas, Book or 3.
113 " Alligator Pears, " or 3.

Books will be awarded by the Judges at their discretion, for choice fruits and vegetables not enumerated. The fruits and vegetables for which premiums are awarded, are to be at the disposal of the Society.

No person can receive but a single premium on the same fruit.

Premiums will not be awarded unless the samples exhibited are deemed meritorious by the Judges.

FLOWERS.

114 Best collection and greatest variety of Flowers, Silver Cup or $10.
115 2nd-best do. " " " of " " Medal or $8.
116 3rd-best do. " " " of " Bronze " or 5.
117 Best Floral Design, Silver Medal or $8.
118 2nd-best " " Bronze " or 5.
119 3rd best " " Book or 3.
120 Best Boquet, Pair of Vases or 5.
121 2nd-best " Boquet Holder or 3.
122 Best arranged Basket of Flowers, Boquet Holder or $3.
123 2nd-best " " of " Book or 3.
124 Greatest variety of Roses.

Discretionary premiums will be allowed in addition to the above. The flowers to be at the disposal of the Society.

Farm Implements, &c.

125 Best domestic manufactured Harrow, Bronze Medal or $5.
126 " " " Cultivator, " " or 5.
127 " " " Ox Cart, Silver " or 8.
128 " " " Ox Yoke, Bronze " or 5.
129 " " " Churn, " " or 5.

Domestic Manufactures.

130 Best dom. manufactured 1 doz. Brooms, Bronze Medal or $5.
131 " " " 3 Hats, " " or 5.
132 " " " 3 Door Mats, " " or 5.
133 " " 3 Floor, Table or Sleeping do., " " or 5.
134 " pair Knit Stockings, Book or $3.
135 " Linen Bosom Shirt, " or 3.
136 " Ornamental Needle Work, Book or $3.
137 " worked Ottoman Cover, Diploma or 2.
138 " " Chair Cushion and Back, Diploma or $2.
139 " variety of Worsted Work, " or 2.
140 " worked Collar and Handkerchief, " or 2.
141 " 2 lamp-stand Mats, " or 2.
142 " Ornamental Shell or Fancy Work, " or 2.
143 " Specimen Leather Flowers, " or 2.
144 " Salted Beef, sample of 20 bbls., Silver Cup or $10.
145 " " Tongues " of 5 " " Medal or 8.
146 " Bacon, dom. man , 100 lbs., " " or 8.
147 " Soap, " " 100 " Bronze " or 5.
148 " 100 Cigars, sample of 10,000, Silver Cup, or 10.
149 " Pickles, " of 5 bbls., " Medal or 8.
150 " Salt, " of 20 " " " or 8.
151 " Indigo, " of 5 lbs., " " or 8.
152 " Arrow Root, " of 200 " " " or 8.
153 2nd-bst. " " " of " Bronze " or 5.
154 Best Poha Jelly or Marmalade, " " or 5.
155 " Guava " or " " " or 5.
156 " Tanned Native Goat Skin, " " or 5.
157 " " " Cow-hide, " " or 5.
158 " Boots made of nat. tan.'d leather " " or 5.
159 " Shoes " of " " " " " or 5.
160 " Saddle " at the Islands, " " or 5.
161 " Bridle " at the " " Book or 3.
162 " Bread " of Hawaiian Flour, Cup or $10.
163 2nd-bst. " " of " " Medal or 8.
164 3rd-bst. " " of " " " or 5.

Requirements from Competitors.

All exhibitors, except ladies, and natives who are members of auxiliary societies, paying their subscription fees into the parent Society, must become members of the society, in order to take a premium, and

must have their articles and animals *entered on the Secretary's Books, not later than* TUESDAY, JUNE 10th, 1856.

All articles for exhibition must be delivered to the Committees appointed for the reception and arrangement of articles as early as Wednesday morning, 9 o'clock, A M., except flowers, which will be received until 10 A.M.

Horses and all other animals must be brought to the ground as early as palf-past 10 o'clock, A.M.

Persons intending to exhibit are specially requested to forward their entries to the Secretary at the earliest date possible, as it will greatly facilitate the business of the show and the making of the preliminary arrangements necessary thereto.

Articles or animals removed from the ground before the close of the exhibition, (except by permission of the President) cannot receive a premium though awarded.

Articles and animals will be numbered as they are received, and not labeled as heretofore, and prize cards or flags will be attached to the successful articles or animals immediately after the decision of the Judges.

INSTRUCTIONS FOR THE JUDGES AND SUPERINTENDENTS.

The Judges will meet on the grounds precisely at 11 o'clock, on Wednesday, receive the list of entries, and then proceed to decide upon the merits of the different articles and animals submitted to them, reference being made to the numbers affixed to each.

A Superintendent will attend each set of Judges, point out the different articles and animals to be examined, and attach prize cards or flags to the successful articles and animals.

The Judges will report not only the animals entitled to premiums, but also those *next in merit* in each class, to meet the contingency of any objection that may be made to the awards. They will also report any animals which in their opinion deserve special commendation.

In all articles on exhibition where competition is not made, the Judges *shall withhhold premiums*, unless the article is of such superior merit as to be entitled to the award.

In all cases the *Diploma* of the Society is to be awarded ONLY *as evidence of* SUPERIOR MERIT.

Animals, implements and articles which have heretofore received the first premium of the Society may be allowed to compete, and if adjudged superior to any other on exhibition, will be awarded the *Certificate* of the Society to that effect, or the Diploma of the Society, at the option of the exhibitor.

NAMES

OF THE MEMBERS OF THE

ROYAL HAWAIIAN AGRICULTURAL SOCIETY.

LIFE MEMBERS.

His Majesty, Kamehameha IV.

Booth, Joseph
Brewer, Chas. 1st
Cummins, Thos.
Hubertson, Geo. Fred.
Janion, Robt. C.
Kamehameha, H. H. Prince Lot
Kenway, Geo. S.
Lee, Wm. L., H. H. M.'s Chief Justice.
Makee, Jas.
Marshall, Jas. F. B.
Meek, John
Miller, Wm., H. B. M.'s Consul General.
Montgomery, John
Peirce, Henry A.
Pitman, Benj., Vice-Consul for Chile.
Wood, R. W.
Wyllie, R. C., H. H. M.'s Min. of Foreign Relations.

ANNUAL MEMBERS.

Adams, A. Sen.
Adams, D.
Aldrich, W. A.
Alexander, W. P.
Allen, E. H., H. H. M.'s Min. of Finance.
Allen, William
Andrews, C. B.
Andrews, L., sen., H. H. M.'s Judge of Probate.
Andrews, L., jun.
Archer, A.
Armstrong, R., H. H. M.'s Min. of Public Instruction.
Austin. J. W.
Anthon, L. H., Royal Danish Consul.
Bailey, Edward
Bal, Eugene
Baldwin, D.
Barnard, J. C.
Bartow, C. S.
Bates, A. B., H. H. M.'s Law Adviser.
Beckwith, G. E.
Bishop, C. R.
Bond, E. P.
Brewer, C., 2nd.
Brinchley, J. L.
Brown, J. H.
Burbank, S.
Brown, M.
Burdick, James A.

Carter, H.
Cartwright, A. J., jun.
Castle, S. N.
Chamberlain, J. E.
Chamberlain, W.
Chancerel, V.
Clark, E. W.
Clouston, Robert
Coady, Richard
Coan, Titus
Cooke, A. S.
Cooper, W. A.
Crabb, H. G.
Crosswell, H. J. G.
Cummings, P.
Colburn, J. F.

Damon, S. C.
Davis, R. G., Acting Consul for Peru.
Dimond, Henry
Dole, D.
Dominis, Jno. O.
Dowsett, J. I.
Dowsett, S. H.
Dwight, S. G.

Emerson, J. S.
Everett, A. P., Consul for Chile.

Fairbanks, H. W.
Field, B. W.
Fitch, H. T.
Flitner. D. N.
Fornander, Abraham
Fosbrook, H.
Franconi, L.
Frick, D.
Fuller, J.

Gilman, G. D.
Goodale, W., Collector-General.
Gower, G. D.
Gower, J. T.
Green, J. S.
Green, W. L.
Gulick, P. J.
Gregg, D. L., U.S. Commissioner.

Hackfeld, H. Consul for Sweden and Norway.
Hall, E. O.
Hanks, Fred. L.
Hardy, Jacob
Harris, C. C.
Hatcher, J.
Heuck, C. T.
Hillebrand, Wm.
Hoffmann, Ed.
Hoffmeyer, S.
Holdsworth, H. S. H.
Holt, R. W.
Hopkins, Chas. G., Director of the Government Press.
Howland, H. S.
Humphreys, Wm.

Ii, Jno., Associate Justice, Sup. Court.
Ingraham, G. B. C.

Janion, Jno.
Johnson, Ed.
Johnson, Samuel
Johnson, W. H.
Jones, Wm. Ap
Judd, C. H.
Judd, G. P.

Knudsen, V.
Kaauwai, D.
Kekaulahao, J.

Ladd, William
Landais, M.
Lathrop, G. A.
Lawrence, Robert
Lewers, C. H.
Luce, Geo. H.

McFarlane, H.
Maikai, J. W. E.
Makee, P. N.
Manini, F. P.
Manini, Paul
Marsh, J. W.
McLean, Geo.
McDuffie, A. J.

Metcalf, G.
Moffit, R.
Monsarrat, M. C
Mossman, Thos., sen.
Macy, Geo.
Moch, J. A.
Melchers, G. C.
Moll, Ed.
McConnell, Geo.
McIntyre, H.

Neilson, H. A.
Newcomb, Wesley

Oudinot, G. A.

Parke, W. C., Marshal Hawaiian Islands.
Paty, Jno.
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Penhallow, D. P.
Perkins, B. R.
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Pratt, I. R.

Rahe, G. W.
Reiners, Gustave
Reynolds, Steph.
Rhodes, Godfrey
Rhodes, Henry
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Rice, W. H.
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Richardson, John
Risely, Geo.
Ritson, John
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Robinson, Jas.
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Smith, J. M.
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Snow, B. F.
Spalding, J. C.
Spencer, A. H.
Spencer, Steph.
Stangenwald, Hugo
Strong, Rev. J. D.
Sumner, Wm.
Swinton, Henry

Thomas, G.
Thurston, A. G.
Torbert, L. L.
Treadway, P. H.

Vincent, C. W.
Von Holt, H.

Webster, Wm.
Weston, D. M.
Whitney, H. M.
Whittlesey, E.
Wideman, H. A.
Williams, Geo.
Wond, Wm.
Wood, J. H.
Wood, R. A. S.

Young, John, H. H. M.'s Min. of the Interior.

CORRESPONDING MEMBERS.

Bond, Geo. W., Boston.
Bowring, John, L. L. D., H B. M.'s Consul, Canton, China.
Bridge, Horatio, Purser U S. Navy.
Dennison, Capt. Sir Wm , R. E , Lieut.-Governor of V. D. Land.
Dickson, Geo. Fred., London, England.
Ellsworth, Hon. Henry L., Indiana, U. S, A.
Emmons, Prof. Ebenezer, Albany, N. Y.
Ewbank, Hon. Thos., U. S. Commissioner of Patents, Washington, D. C.
Grey, Sir George, Governor of New Zealand.
Henry, Joseph, L. L. D., Smithsonian Institute, Washington, D. C.
Hooper, Wm., San Francisco, Cal.
Johnson, B. P., Albany, N. Y.
Johnson, —— M.D., Tahiti.
Lee, Hon. D., Georgia, U. S. A.
Petton, John M., N. Orleans, U. S. A.
Seaman, Berthold, London, England.
Skinner, John S., Washington, D. C.
Teschmaker, Jas. E., Boston, U. S. A.
Vattemare, Alex., Paris, France.
Velasquez, Don Jose Maria, Havana.
Warren & Son, San Francisco, Cal.
Mueller, Ferd., Melbourne.
Klee, Mons., Guatimala.

ERRATA.—Page 75, 2 lines from the bottom, instead of diminished syphilis * * * * * one-fifth, read reduced syphilis in the army in one year to one-half, and in four years to one-seventh.

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TRANSACTIONS

OF THE

ROYAL HAWAIIAN AGRICULTURAL SOCIETY

AT ITS

SIXTH ANNUAL MEETING,

JULY, 1856.

VOL. 2, NO. 3.

HONOLULU, H. I.:
GOVERNMENT PRESS.
1856.

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LIST OF OFFICERS FOR 1856.

JAMES F. B. MARSHALL, *President.*

BENJ. PITMAN, Hawaii,
P. CUMINGS, "
L. L. TORBERT, Maui,
SAML. G. DWIGHT, Molokai,
H. A. WIDEMANN, Kauai,
} *Vice Presidents.*

GEORGE WILLIAMS, *Treasurer.*

WILLIAM HILLEBRAND, *Corresponding Secretary.*

E. O. HALL, *Recording Secretary.*

J. H. WOOD,
WM. WEBSTER,
C. R. BISHOP,
A. B. BATES,
M. C. MONSARRAT,
} *Executive Committee.*

ANNUAL MEETING

OF THE

R. H. AGRICULTURAL SOCIETY.

HONOLULU, July 29, 1856.

The Society met at the Court House at 11 o'clock A. M., which was the time appointed for the Annual Meeting by the Board of Managers.

The President of the Society, J. F. B. Marshall, Esq., took the Chair and called the meeting to order; and in conformity with the Constitution, read his report for the past year, which was accepted, and is as follows:

Gentlemen of the Royal Hawaiian Agricultural Society:

It is rendered my duty under our Constitution to make the Annual Report of the state of our Society, its transactions and its prospects.

At our last Annual Meeting the Hon. Wm. L. Lee, at that time our esteemed and efficient President, was absent on a mission to the United States, which had for its principal object the negotiation of a Treaty of Reciprocity that should relieve us of the heavy duties now imposed on some of our principal productions, and thus give a much needed stimulus to Hawaiian agriculture.

As you are already aware, that mission was eminently successful, and the treaty now only awaits the action of the United States Senate to go into effect. I am assured by Mr. Lee that the treaty will without doubt be ratified by the Senate. It is hoped and believed that its operation will attract foreign capital to our shores, which, by developing more fully the agricultural resources of the Islands, shall create a large export, and thus raise this nation from its present torpid condition to a state of comparative prosperity.

The past year has been one of almost unprecedented financial embarrassment in this community, and though the commercial interests

have been the most seriously affected, yet the agricultural interests have also heavily suffered.

The great depreciation in the prices of improved real estate, both in town and country, is an indication that the evil is deeply seated and will not speedily be removed. Our Society has felt in no slight degree the benumbing influence of the general depression; and we meet to-day under circumstances of great discouragement, and with prospects dimmed and clouded.

From various causes we have been deprived of the counsel and aid of several of our earliest and most efficient members; and in a small community like this, the loss of even one advocate is seriously felt. The Hon. W. L. Lee, who may be termed the founder of this Society, who was for five years its President, and was energetic and untiring in his efforts in its behalf, is now prevented by confirmed ill health from aiding us with his counsel and his presence. God grant that such a measure of health at least may be restored to him as will enable him to continue his valuable labors in this community, for I know that without the ability to be useful to his fellow men, life itself will become a burden to him.

Another of our first members and zealous supporters has been taken from us. Stephen Reynolds, Esq., one of our oldest residents, and who was long one of our wealthiest citizens, driven to the verge of bankruptcy by pecuniary embarrassments, has become a lunatic: His charities were ample; and many have found in him a "friend in need." We can only hope for his speedy restoration.

Others of our most efficient members have been compelled by pecuniary difficulties to give up agricultural pursuits, and abandon their "hard fought fields," at enormous sacrifices, to seek some more remunerative occupation. The sugar plantation of Mr. Reynolds on Maui, on which he had expended nearly seventy thousand dollars, has been sold for seventeen thousand dollars; the fine plantation of L. L. Torbert, Esq., on Maui, on which so much capital and labor had been expended, was forced off at auction at a proportionate sacrifice. The coffee estate of G. Rhodes & Co., on Kauai has also been sold at a great loss.

The great loss at which these estates have been sold does not arise

from any falling off in the profits of the business, for I consider that the prospects of sugar and coffee planters were never better than now, but from the great lack of capital to purchase such estates. The estates themselves were embarrassed by heavy debts, the interest of which swallowed up all the profits. They are now owned by men of capital, who can hardly fail to reap large returns for their investments.

The Hawaiian Steam Flour Company has also been compelled to sell out at a loss to a new company, who are carrying on the business with vigor and with good prospects. The flour now manufactured is of superior quality and commands a ready sale. I consider this enterprise of great importance, and hope it will be sustained. Wheat can be raised by the natives without difficulty, and if the manufacture of flour can be made profitable, a sure source of profit is thus opened both to the native and foreign population of the rural districts suitable to wheat raising. At present all our wheat is raised on East Maui, but it is believed that there are lands on Hawaii equally well adapted to this grain, and the company are taking measures to extend its cultivation.

I think that a close examination of the history of sugar, coffee and wheat growing at these Islands, will show that they can and will be made profitable. The instances of failure, which have been but too numerous, and which have brought such enterprises into disfavor, if examined into will be found to have been caused either by the choice of unsuitable localities, mismanagement, or lack of capital. If, instead of being discouraged by such failures, we make use of the lessons which they furnish, and avoid the errors which caused them, I think the future will show that success will prove to be the rule rather than, as heretofore, the exception.

The Board of Managers, during the past year, has made several attempts to introduce insectivorous birds, but thus far without success. I have strong hopes, however, that Mr. Bartlet, the Deputy Collector of this port, who is now absent on a voyage to Oregon, will succeed in procuring some of these very desirable immigrants. The Board furnished him with funds for this purpose, and authorized him to incur any additional expense necessary to accomplish the object. We have

also sent funds to Australia, through the kindness of Dr Hillebrand, whose correspondent, Ferd. Mueller, Esq., is now one of our own corresponding members, for the purchase of certain desirable plants and seeds, but the *Vaquero*, by which vessel they were sent, has not yet returned. From San Francisco, we have imported peach and apricot trees, which have been distributed through the group and are doing well.

Through the kindness of R. J. Hollingsworth, Esq., formerly a member of this Society, but now a resident of Calcutta, we have received from that place quite a variety of new seeds of ornamental shrubs and trees, which have also been scattered over the group, and many of which are thriving. A list of them will be published among the Transactions.

I have made several applications at the office of the Minister of the Interior for permission to select the fifty acres of land, that were devoted some years since by a law passed for that purpose, to the use of the Agricultural Society for the purpose of a nursery; but owing to the non-completion of all the surveys, the land has not till now been ready for selection.

I regret to state that on the 4th July last, during the absence of the Treasurer from his room, the uninvested fund of the Society in his charge, amounting to $820, were stolen from a bureau-drawer in which they were kept. Mr. Williams voluntarily assumed the loss and gave security for its repayment. The Board of Managers, not feeling authorized to release him from the responsibility of a loss occasioned by his want of care in not placing the fund in a secure place of deposit, accepted his securities. The loss, however, is a heavy one for Mr. Williams to bear, and though he does not seek to be released, still it is a proper question for your consideration, whether he shall be held accountable for the amount. This fund was to be devoted to the payment of premiums awarded at this Exhibition, and other outlays and current expenses, for which purpose it will now be necessary to encroach on the permanent fund of the Society.

I wish to say a word in reference to this "permanent fund," as some have thought it unwise to let it accumulate, thinking it should be expended in the introduction of new stock, etc. The Government, as

I have already stated, have allotted to the Society fifty acres of land, which are now ready for selection, for the purpose of a public nursery, in which rare and desirable plants and trees could be propagated for distribution, and in which experiments could be tried, at the expense of the Society, that might prove of benefit to the planter, farmer and gardener. To make such a use of this land we need the means to enclose and clear it, and if possible to build a suitable dwelling house for the use of the superintendent. We must also have the means to pay the laborers employed, as even if the nursery should eventually pay its way, it would not be for one or two years. This is one great reason why it is desirable to create a permanent fund. Another reason is that even if the fund were not to be employed for the above purpose, still it is very desirable to have an income in addition to what is raised by subscription, fees, or the government donation, that shall increase our means of usefulness.

I have not heard of any new plantations being commenced. The great wants of labor and capital still operate to prevent any new enterprises of this nature. The manufacture of cigars has been commenced at Koloa, Kauai, by Mr. J. R. Opitz. Mr. H. A. Widemann, of Grove Farm, Kauai, has commenced the manufacture of kukui oil, and has produced a very superior article, which Mr. Archer, in his report from that island, considers to be very excellent for burning, second only to the best sperm oil. As the article is sold in Honolulu at one dollar per gallon, one-half the price of sperm oil, if it proves to be equal to Mr. Archer's opinion, it will doubtless command a a ready sale, and be a valuable production. It is also an excellent paint oil. I would refer you to the samples of kukui oil, which will be exhibited by Dr. Frick, as specimens of what can be produced from this valuable nut.

The manufacture of soap has been commenced by Messrs. M. R. Packer & Co., who seem determined to triumph over every obstacle to success. The soap made by them, owing to the cheapness of tallow and some other ingredients used in its manufacture, is said to be superior to any imported soap. Success to all such enterprises. They add to the wealth of the country and should be encouraged.

Our Society has now reached the seventh year of its existence. It

is well to inquire if its present organization and system has proved to be the one best adapted to secure and promote the great objects for which it was instituted; in what respects it has failed to answer the purpose, and what have been the obstacles that have caused such failure.

To my mind it is clear that the great and, at present, almost insurmountable obstacle to the complete success of the Society, is the isolation of the agriculturists from each other and the difficulty of communication, especially with Honolulu, the head-quarters of the Society. "Lands intersected by a narrow frith abhor each other," and though here the lands are on good terms enough, yet we all without exception abhor the "narrow frith." Our plantations, and with but few exceptions, our farms are all on the islands of Maui, Hawaii and Kauai, and in the channels between those islands and Oahu rolls the roughest sea to be found in the Pacific. In the absence of steam navigation, it is too much to expect of the agriculturists on those Islands, that they shall come up to our exhibitions with their produce, which may be spoiled before it reaches Honolulu, and at a loss of time which they can ill afford. Still less can we expect them to trust valuable stock to the mercy of the winds and waves. Nor can we wonder that when they come themselves, and see articles of produce and stock, of a quality much inferior to their own, receiving valuable premiums merely because the exhibitor's location is convenient to the place of exhibition, that they should feel dissatisfied and lose interest in the Society. Nor, from the above reasons, is it to be wondered at that the exhibitions of the Society are meagre, and not by any means a fair exhibit either of the capabilities of the Islands, or even of their actual productions.

I rejoice to know that the Government have at last determined to provide a suitable steamer for inter-island navigation; but one vessel will not remedy this difficulty.

For the above and other reasons it seems to me highly desirable that we give up, *for the present*, not only the annual exhibition, but the system of expending large amounts for premiums of plate, etc. As I have shown, and as experience has fully proved, the result is that the same parties, year after year, carry away most of the prizes,

which lose their value, while other members from living on other islands cannot compete for them. Unless all the members of the Society can enter the lists on terms of comparative equality, competition is destroyed, our exhibitions lose their interest, and dissatisfaction is created.

The Board of Managers are authorized by the Constitution to grant premiums, and I would propose for your consideration, in view of the above facts, that the annual exhibition and premiums be for the present suspended; that the Board of Managers grant premiums to meritorious producers from time to time, as they may deem advisable on satisfactory proof of merit being shown; that such premiums shall consist not of plate, but of superior implements imported with the premium fund for that purpose, or of books, money, or the Society's medal, at the option of the party; that the most of the premium fund and other available funds of the Society be used in importing more largely than heretofore, stock, seeds, plants and implements to be disposed of at cost, or in such manner as shall seem best to the Board. For instance, a meritorious producer or grazier, whether on this or other islands, might have the use, for a limited time, of the Society's imported stock to cross with his own animals. By these means I think the funds of the Society might be employed to more advantage than at present, and its usefulness and popularity much increased. It would be highly desirable that the Society should have a room in Honolulu as its head-quarters, where the members could have access to the books and periodicals of the Society, and where specimens of what are, and what might be produced here, could be exhibited. The Society has several books and receives agricultural periodicals which are now inaccessible from its having no public place of deposit.

When our Society was first organized it was proposed to create native auxiliary societies, and committees on each island were appointed for this object; owing however to the apathy of the people, and the difficulty of communication also, nothing in this way was accomplished. His Majesty, however, with a desire to awaken industrious habits and promote agriculture among his people that does him great honor, has taken the lead in the formation of the National Agricultural Society, of which he is the President, from which we hope

good results. The new society has our most cordial wishes for its success. Our objects and our interests are identical, and if the united efforts and wishes of the two societies can be crowned with success, a brighter day will dawn on Hawaii than any that has yet been seen in its history.

The Treasurer, Mr. George Williams, read his Report, which is as follows:

Mr. President and Gentlemen of the R. H. Agricultural Society:

For the third time it becomes my duty as Treasurer to lay before you a statement of the financial concerns of the Society, and, although it may not be as encouraging as those of former years, I think it will show that we have made some progress, notwithstanding the coldness and indifference of many of our old members.

There has been a great decrease the past year in the number of subscribers, which may, I think, be ascribed to the very poor exhibition of last year. If agriculturists generally would show a deeper interest in our exhibitions, and use greater exertions to make them attractive, the Society would meet with a ready support from all other classes of the community, and would soon become a really useful and flourishing association.

Leaving speculation, I must now touch on a very disagreeable reality. On the night of the 4th of July, while at the ball given at the Court House, my apartments were entered and robbed of $820 belonging to the Society. As yet no trace has been discovered of the thief. For this sum I have given my note, with a responsible endorser—believing that the loss should be mine, heavy as it may be upon me; and I shall feel in a measure compensated for the loss if my action in the matter meets with your approval.

The receipts and disbursements have been as follows:

RECEIPTS.

Cash on hand from last year,	$529 49	
" returned overpaid for medals,	22 00	
" received from Fair,	135 53	
" " " Hawaiian Treasury,	500 00	
" " " sale of Peach Trees,	105 13	
Interest on note and mortgage,	120 00	
Three pairs sheep shears,	8 75	
Loan of cash returned,	2,000 00	
Interest on loan,	120 00	
Sale of "Transactions,"	4 50	
Interest on note and mortgage,	156 00	
Seventy-one Annual Members,	355 00	
		$4,051 40

DISBURSEMENTS.

Paid Cash Premiums,	$80 00	
" expenses of Fair,	71 29	
Certificates of Membership to auctioneers and three others,	25 00	
Forwarded to Melbourne for Seeds, etc.,	50 00	
" United States for Premiums,	230 00	
" California for Peach Trees,	100 00	
Paid Cash Premiums,	40 00	
" for printing "Transactions,"	223 00	
" for binding, "	25 00	
" for envelopes,	4 00	
Forwarded to California for Birds,	50 00	
Loaned on note and mortgage,	2,000 00	
Paid for recording "	8 00	
Gave a note to the President,	820 00	
Paid postage on "Transaction,"	3 60	
" for envelopes,	2 50	
Balance on hand,	324 01	
		$4,051 40

The invested funds now amount to $4,120.

Respectfully submitted.

GEO. WILLIAMS, *Treasurer.*

In view of the facts in relation to the loss of the $820 mentioned in the above report, and the satisfactory manner in which Mr. Williams has assumed the responsibility and offered to secure the payment of the money stolen, it was

Resolved, That Mr. Williams be released from his responsibility in relation to the stolen funds; and it was further

Resolved, That uninvested funds in future be deposited in some secure place, at the direction of the Board of Managers.

The reading of reports of standing Committees being in order, some considerable time was thus occupied, when, on motion, their reading was suspended, and the Society took up the consideration of the suggestions of the President in his report relating to the suspension of annual fairs, and the general expenditure of funds for premiums. A long discussion ensued, and various suggestions were made in regard to supplying plants and seeds for the use of agriculturists, whereupon it was

Resolved, That the suggestions of the President be recommended to the favorable consideration of the Board of Managers, and that they be empowered to carry out those views at their best discretion.

The choice of Judges for the Fair on the 30th, resulted in the selection of the following, viz:

On Cattle.—Messrs. Judd, F. Manini and Harder.

On Horses.—Messrs. Monsarrat, Armstrong, Waterman.

On Sheep and Swine.—Messrs. Prendergast, Goodale, P. G. Gulick.

On Eggs and Poultry.—Messrs. J. Ladd, Whitney, Sparks.

On Dairy.—Messrs. Savidge, Moffit, Pitman.

On Syrup and Sugar.—Messrs. G. Rhodes, G. A. Lathrop, Weston.

On Grains and Crops.—Messrs. J. H. Wood, Armstrong, Hayden.

On Coffee.—Messrs. Bishop, Pitman, G. Rhodes.

On Vegetables and Fruits.—Messrs. Holstein, J. H. Wood, E. Hoffmann.

On Flowers.—T. Brown, Wm. Fell, Dr. Guillou.

On Farm Implements and Domestic Manufactures.—Messrs. Aldrich, Reiners, Howland.

On Miscellaneous Articles.—Messrs. Wyllie, Gregg, Melchers.

On Embroidery and Ornamental Work.—Messrs. J. Ladd, Moll, Whitney.

The following officers were next elected for the ensuing year:

President—Jas. F. B. Marshall.

Vice Presidents—B. Pitman, P. Cummings, } Hawaii.
L. L. Torbert, Maui.
R. W. Wood, Oahu.
H. A. Widemann, Kauai.
S. G. Dwight, Molokai.

Corresponding Secretary—Wm. Hillebrand.

Recording Secretary—E. O. Hall.

Treasurer—Geo. Williams.

Executive Committee—J. H. Wood, Wm. Webster, C. R. Bishop, A. B. Bates, M. C. Monsarrat.

Adjourned to the Bethel at half-past 7 this evening, and until Thursday morning, at 10 o'clock, for business, at the Court House.

At half-past seven, P. M., the Society met at the Bethel. After singing by a select choir, Dr. Wm. Hillebrand was introduced by the President, who delivered the annual address which follows below:

Mr. President and Gentlemen of the R. H. A. Society:

It has been customary at the anniversary meetings of our Society hitherto, to pronounce an unremitting eulogy on the calling which unites us here, and from which our Society has borrowed its name. Permit me, for once, to strike in a different line and to abuse it. To abuse it? I hear you say: but then you are out of place! You ought not to have appeared here! Allow me to correct myself by saying, to abuse its *abuse*—to restrain it within its proper limits.

What is the object of agriculture? Why, to feed and clothe man; to still his hunger and thirst; to protect him from cold and heat, from rain and wind. To supply his wants, and procure his ease, this self-styled lord of creation goes to work without hesitation or scruple to remodel the features of nature, which an all-loving Providence had arranged so as to offer the means of existence to every one of its created beings, from the humblest moss and insect upwards to the

highest developed animal. As if there were nothing worth existing beside him, he exterminates what does not administer to his wants or gratify his senses. Noble forests fall groaning under the relentless ax of the pioneer; myriads of modest little plants and weeds disappear under the burrowing edge of the ploughshare, to be replaced by a few kinds of social grasses called cereals, and some other plants and trees, from which he is accustomed to draw his sustenance. The aurox and buffalo, the elk and dam retreat to make room for the cow, the horse and sheep. So fully is he impressed with the propriety of his doings, that even his language outlaws by the opprobrious epithets of weed and vermin whatever poor being, with its innate instinct of self-preservation, interferes with the accomplishment of his preconceived mission. Where before forest and glade, swamp, meadow, lake, heath and river alternated in charming variety, now appears the level monotony of waving corn-fields or uniform pasture ground. Swamps are dried, lakes drained, rivers narrowed in their beds; the noble forest only finds a refuge on the inaccessible mountains, and with them flee away from the settlements of man, or disappear under his tramp, the lilly of the fields, the merry songster of the woods. It hardly appears credible, and yet is true, that through the vast extent of China proper, save a few aquatic plants, not one herb is found indigenous to the country, unless cultivated by man. Such is the result of a few thousand years of continuous tillage of the soil. Presently call into operation one of those great political revolutions which sweep an industrious nation from the surface of the earth, or replace it by a barbarous one, the soil will cease to yield its harvests of corn, the rice-fields will dry, not to be replaced by the ancient forest, but to make room for the steppe, the desert. Let us follow up this reflection more in detail.

Setting aside the vexed question of the cradle of mankind, leaving it unsettled whether a paradise was on the table-land of Armenia, in the lovely vale of Kashmere, or near the terminus of the two mighty rivers of Central Asia, there can be no question that the first migrations of men took place towards the bottom land, between and around the Euphrates and Tigris, and along the shores of the Caspian Sea. There we see, at the earliest dawn of history, mighty empires flourish—not blooming into existence, but having already passed over that

maturity of national development, where the rough virtues of the founders are softened into the refined enjoyment of life, under whose stimulus arts and sciences spring into existence. We actually find them in the last stage of degeneracy, where refinement dissolves itself into voluptuousness, and the effeminacy of manners indicate the impending dissolution of the body politic. A succession of four great empires, one taking the place of the other, passes before our astonished eyes before even authenticated history begins; and yet the wondrous monuments, extracted by modern searchers from the bosom of the earth, lift from them the veil of myth, and divest doubt of its support. To this centre points the tradition of the Vedas, the Holy Writ of the Jews, and all historical evidence of the Caucasian tribes, as their origin. From there the man of Ur came with his flocks to settle, by the Lord's command, in Canaan; from there emerged the Pelasgi and Hellenes, destined to shed a never dying lustre over the land of their choice; and later the Goths, Huns, Mongols; and last, the Turks, to crush the decaying empires of the west, either to invigorate their dying civilization by a new stock, or to exterminate it. With them traveled their inseparable companions, the cereals, wheat and barley, already known and cultivated in Greece at the time of Homer—rye and oats completing their migrations at a later time. In vain do botanists now search for the original home of those useful plants, disseminated though they are over the whole expanse of the globe, while all historical records trace back their origin to the starting point of man's migration. From where came the grape, which already tempted Noah's weakness; the fig, date and olive, intimately associated with patriarchal life; the peach, apricot and melon? the cherry, which first paraded in Lucullus's triumphal entry in Rome? The lemon, orange, mulberry, and many other of the precious gifts of a bountiful Providence, which delight the senses of mortals? All testimony coincides that these countries were amongst the most favored of Nature's creation, swelling under exuberant prolificness. From the remotest times of antiquity man felt attracted towards these regions, and generation followed upon generation, populous cities were destroyed, to be superseded by others more splendid. As late as the time of Alexander, the great conqueror's historian tells us of

the country between the Tigris and Euphrates, that "its soil is so rich and fecund, that they say the cattle must be driven off from time to time, lest they perish from surfeit." Compare with this the reports of recent travelers, who in these very regions have to wend their toilsome way over dreary deserts for weeks together, and in what few spots they find the country looking green and blooming on both sides of the river, have to limit it by the addition, that the fertility extends only a few miles inland, but beyond all is a sandy desert. "Most striking in this part of Mesopotamia," says Ida Pfeiffer, "is the entire want of trees; for the last five days I have not seen one, and I believe there must be many people who have never seen any in their lives. There were tracts of twenty or thirty miles where there was not so much as a shrub, though there is no want of (running) water, for no day passed in which we did not cross one or two rivers, large or small." These remarks refer to the cities of the old Assyrian and Babylonian empires. A few degrees farther east the forty marble columns, time out-lasting monuments of the royal city of Persepolis, loom as melancholy land-marks, at the foot of bleak hills, out of a dreary desert. Not more than one-tenth of the whole area of Persia is at present available for cultivation; the rest consists of sand and bare rocks. Turn your eyes to the west—Palestine is no more the land of Canaan, which flowed with milk and honey; the physiognomy of neighboring Arabia seems to have extended over its eastern half. The waters of Merom make room for rice-fields during three-fourths of the year; and the Jordan, the only river of Palestine whose waters flow during the whole year, leaves a dry bed in summer between Merom and Chinnereth, and near the Dead Sea, at the terminus of its course, its depth sinks to three feet. The cedars of Lebanon are thinned; the site of Jericho, the City of Palms, is now occupied by the moveable tent of the wandering Bedouin; palms and ruins are missing. Mount Carmel alone, with its thickly wooded slopes and densely covered valleys, in which myriads of limpid brooks rill through a luxuriant verdure, seems to redeem the old renown of the Promised Land; while the plain of Sharon and the hilly country of Samaria only clothe themselves during the few rainy months in their former splendor. It is not Moslem indolence alone that has to account for

these changes. To finish the picture with the poetical words of the illustrious Schleiden: "No Pythagoras in Egypt need now forbid his disciples the use of the lotus bean; for the soil has lost the power of producing it. The wine of Mendes and Mareotis, which cheered the guests of Cleopatra, and was found worthy the praise of Horace—it has ceased to grow. The assassin will no longer find concealment in the sacred pine forest of Poseidon, to lay in wait for the bard that hurries to the Olympian games, for the pinia has long ago fled from the approaching climate of the desert to the heights of the Arcadian peaks. Where are now the pastures, where the fields around the sacred mansion of Dardanus, which, along the foot of moisture-dripping Mount Ida, fed three thousand mares? Who would now speak of a Xanthus impelling its waves? Who would realize a horse-feeding Argos?"

One simple observation is significant. The clover, which requires a moist climate for its cultivation, has gradually receded from Greece to Italy, and from there to Southern Germany, where already now it begins to be sensibly affected by the increasing drought of summer. Perhaps another singular fact may find its explanation here: Asia, the greatest continent, has a lesser number of indigenous species of plants than Europe.

Let us look at the other side of the picture. Eighteen hundred years ago my goodly fatherland, Germany, received hard names from Tacitus: *Terra in universum aut silvis horrida, aut paludibus fœda, frugiferarum arborum impatiens:* a country either bristling with dark forests or infected by ugly morasses; swampy on one end and stormy on the other. No fruit trees, he tells us, could grow there. The great rivers Rhine and Danube were every winter covered with so solid a crust of ice, that the barbarians would make their predatory inroads in neighboring districts by passing over them with their cavalry, wagons and material. The elk and reindeer, now confined to the Polar regions, as we learn by Cæsar, swarmed over the vast extent of the Hercynian forest. All descriptions of those times would convey the impression, as if it had been a country fit to be inhabited only by brutes and savages, who lived on acorns and would get drunk on barley mead. The parts of Germany with which the Romans at

that time had become best acquainted, were the regions along the borders of the Rhine and Danube.

Now place yourself in imagination, on a sunny May day, upon the hill of Schloss Johannisberg, and let your eyes pass slowly in a circle around you. Is that the same country described by the Roman? Is this the sun that shone on his nation's legions? A checkered cloth of vineyard, corn-field and orchard seems to be spread over the undulating plain, only to be interrupted by handsome villages, flourishing cities, and the parks of the wealthy filled with exotic plants. Take a jaunt over the Bergstrasse, along the foot of the Odenwald; for some sixty English miles you walk through a forest—not of sombre oak and pine, but of fruit trees of every description, the scent of whose blossoms pervades the air with fragrance and fills the heart with delight In summer ship loads of cherries float down the river; and during the vintage, in the fall of the year, the whole population abandons its habitual occupation to cull grapes and press them in vats, amidst a never ending frenzy of mirth and gaiety. This is the country where neither cherry nor grape would ripen in Tacitus's time. Good wine is now made in Germany as far north as fifty-one degrees. As late as the time of Strabo it was thought that the grape would not ripen north of the Cevennes. At the present day the finest peaches are raised at Montreuil, near Paris, and France is considered the greatest wine producing country of the world.

I have tried to delineate in a few general sketches the two phases of the revolution which civilization—for this I take to be equivalent with agriculture—produces on the surface of the globe. In the first an almost uninhabitable country, the perennial mists of which hardly allowed the sun's rays to touch the ground, has been converted into a lovely garden; in the second, the happiest regions of the earth have been transformed into sunburnt deserts. If we ask for the immediate cause of these changes, we are, besides a few accessory agencies, led to the disappearance of the original perennial vegetation, and more especially the trees. Wherever the hardy pioneer fixes his fireplace, his first work is to lay the ax on the noble king of the forest. He chooses woodland in preference, unless rich alluvial bottom land be at hand, because the organic decay which has gone on for centuries

under its shadowy roof, has enriched the soil with humus, has mellowed the stiff clay, or rendered more compact the light sand. What then is the effect of forests upon soil, upon climate and vegetation?

As long ago as 1804, Alex. Von Humboldt in his "Voyage aux Regions Equinoctioux," warned that the waste of forests entailed two evils on the following generation: a want of fuel, and a deficiency of water. The reality of the first is self-evident; the second, although perhaps vaguely felt by any general observer of Nature, was first by him enunciated dogmatically. Of course a statement which, if substantiated, entailed such important consequences, was well worthy to arouse a general attention; and since it was first promulgated up to this time, such a mass of evidence has been accumulated that the theory may well be said to have become converted into a doctrine.

The necessary supply of water to a country is furnished by rivers and rain; or more generally speaking, by atmospheric deposit. A falling off in the supply by the former source can take place without a corresponding diminution of the latter, although a decrease of rain will always be followed by a scarcity of running water. Springs and sources originate on the same principal upon which artesian wells are constructed. The water, precipitated from the atmosphere as rain, dew, etc., is taken up by the upper permeable layers of the soil, filters through them, follows rents or fissures in the rocks until a solid rock or stiff layer of loam oppose its further progress, and oblige it to follow the declivities of the same; passing by lateral fissures, or heaved up by the pressure of the following waters, it reaches the surface as spring or source. Supposing a sufficient quantity of rain to fall, the amount of running water may still be affected by two causes: a quick evaporation on the surface, or undue hardness and resistance of the soil. How from a surface exposed openly to the unmitigated rays of the sun, a great waste of deposited moisture should take place by evaporation, needs no further commentary; nor will any one who takes a look at the bleak slopes of the steep basaltic hills back of our village, find difficulty to conceive how a heavy dashing rain will wash away the minutest particle of soil, as soon as it forms from the disintegration of the rock. In the same manner the light, moveable humus soil, left after the clearing of a forest will,

when situated on a declivity, be swept away as soon as the firm interlacing net-work of roots and rootlets has lost its vitality, and no leafy roof moderates the force of the dashing torrent. In both instances an impermeable stratum remains on or near the surface, and the watery deposit, when small, will return to the atmosphere by evaporation; or when large, sweep down in torrents, overfill the beds of rivers, and pervert, by sudden inundations, into a curse what ought to be a blessing to man. A forest will not only, by its cool shade, lessen greatly the evaporation and retain what evaporates under its vault, but its canopy will also moderate the impetus of the falling drops and distribute its descent over a longer space of time. Besides, the humus layer forming its floor, by virtue of its great hygroscopic capacity, retains for a long time the imbibed liquid, and thereby regulates the flow of the rivers, preventing their sudden overflowing and yielding them food long after the rain has ceased. The inundations, of late so frequent, of the river Oder, in its lower course, are attributed by experts to the waste of forests in the mining districts of Upper Silisia, while it is stated that the planting with trees of the formerly naked slopes of the French Alps has done away with the torrential floods which formerly devastated the lower valleys. With regard to the obstacles offered by a thick forest to evaporation, a traveler in South America says: "In the forests the humidity is constant; it exists long after the rainy season has passed; and the roads that are opened through them remain through the whole year deeply covered with mire. The only means known of keeping the forest ways dry, is to give them a width of from 260 to 330 feet, that is to say, to clear the country in their course." A remarkable instance of how running water diminishes by mere evaporation, without falling off, even with the increase of the yearly quantity of rain, is related to us by Boussingault. The metalliferous mountain of Marmato is situated in the province Papayan, in the midst of immense forests. The stream along which the mining works are established is formed by the junction of several small rivulets, taking their rise in the table land of San Jorge, which overlooks the establishment, and is thickly wooded. When Boussingault visited the place in 1826, he found only a few miserable cabins inhabited by negroes, but on his return in 1830 the

country had the most flourishing appearance. It was covered with workshops, had a foundry for gold, machinery for grinding and amalgamating the ores, and a population of nearly 3,000 inhabitants. It may be imagined that during these four years an immense quantity of timber had been cut down, not only for the construction of machinery and houses, but as fuel and for manufacturing of charcoal. The felling had principally gone on on the table land of San Jorge. But scarcely had two years elapsed before a notable diminution of the water in the stream was noticed. The volume of the water had been measured by the work done by the machinery, and actual gauging at different times showed the progressive diminution of the water. The question assumed a serious aspect, because at Marmato any diminution in the quantity of water, which is the moving power, would of course be attended with a proportionate diminution in the quantity of gold produced. As soon as the diminution of the stream was ascertained, a rain gauge was set up, and in the course of the second year of observation a larger quantity of rain was gauged than in the first year, although the clearing had gone on, still there was no appreciable increase in the size of the running stream. A very similar observation has been made on the Island of Ascension, where an excellent spring at the foot of a mountain, originally covered with wood, dried up when this was cut down, but reappeared in former abundance when the mountain was planted again. Such remarkable effects, arising from the operation of causes limited to narrow localities, cannot be attributed to a diminution of rain. In the first cited instance there was even in one year an uncommonly large fall of rain—undoubtedly accidental. Undue evaporation only can be assumed as the sufficient cause.

Let us now see how forests may effect the absolute quantity of rain, or precipitate of atmospheric moisture. From the surface of the water and the exhalation of plants and animals a constant evaporation of watery vapor is carried on. The vapor, consisting of an agregation of small vesicles, according to its lesser specific gravity, rises steadily from the lower and warmer to the upper and colder strata of the atmosphere. Every gas, under a given temperature, can only take up a certain maximum of moisture; when it has reached that,

we call it saturated. When it is saturated, any addition of vapor will be condensed again to water. The lower strata of the atmosphere being warmer than the upper ones, take up a larger quantity than the latter; consequently these will be saturated, while the former still retain capacity to take up more. As soon as this point is reached, all surplus in the upper regions will have the effect to coalesce those countless invisible vesicles in a lesser number of larger ones, whereby they become visible to the eye as clouds. The more this condensation proceeds, the heavier the vesicles will become, until their specific gravity exceeds that of the atmospheric air, when they fall down. In their downward course they steadily grow by appropriating to themselves the surplus of the lower strata, which, by their contact, are suddenly cooled down beyond their saturation point, and reach the earth as rain. Not unfrequently it happens—and we in Honolulu may witness the sight almost daily—that when a rain-cloud has to pass, in descending through a drier stratum of atmosphere, whose temperature is considerably higher than its own, it dissolves again by evaporation and disappears. The same effect of course is produced by dry and warm winds. But any strong wind may, for a limited locality, become a cause of disturbance, inasmuch as its impetus will overcome the specific gravity of a cloud. From these preliminary considerations it seems to be a lawful deduction, that any causes which increase the moisture of the atmosphere in general, and lessen the temperature and dryness of the lower strata, will augment the fall of rain. Have forests a tendency in either of these ways?

The great source of atmospheric moisture is the vast expanse of flowing and standing water; for an insular climate it is the paramount one, against which all other sources sink into insignificancy. But different is it with vast tracts of wooded land in the interior of a continent, particularly where a high wall of mountains forms a barrier to the sea wind. There the amount of moisture exhaled in the vegetating process will play an important part; and indeed Humboldt considers it as the great factor by which forests increase rain.

Far different however is it with regard to the second question. Do forests contribute to cool the lower atmosphere? A child knows that a shade affords coolness by intercepting the rays of the sun, and any

one superficially acquainted with the laws of natural philosophy can tell you that a dark colored surface, as the sapgreen of leaves, imbibes the rays of caloric, while a light one, like sand or limestone, reflects them, and thereby heats the ambient gaseous medium. The imbibed heat again is spent in hastening the evaporation of the water contained in the leaves. But in evaporation of liquid a considerable amount of caloric is bound as latent heat, which is abstracted from the ambient medium. Pour a drop of ether on your hand and you will soon perceive the cooling effect of its transition to gas. Similarly the exhalation of plants. Thus the forests may operate in a variety of ways towards reducing the temperature of the lower strata of atmosphere, and therewith their point of saturation.

But these are not the only, perhaps not even the principal, ways in which forests contribute to fix the atmospheric moisture. Let us consider how dew originates. A general property of all bodies is that of radiation of heat. A body will constantly emit heat to the surrounding mediums, and only keep up a steady temperature, when it receives as much as it gives off. Different bodies possess this quality in a different degree: gases and atmospheric air have least of it, most of all organic substances, particularly such as combine greatest surface with least bulk, as cotton, wool, feathers. During a clear and calm night, when the great generator of caloric, the sun, has sunk below the horizon, and no other source of heat is left but the imperceptible one of the proper heat of the earth, all bodies will steadily lose heat by radiation towards the upper regions of the atmosphere, for these being greatly cooler than the lower ones will abstract heat without rendering an equivalent. Any fast cooling body will, by lowering the saturation point of the surrounding atmosphere, precipitate the vapory moisture in it; a principle upon whose application Daniel's hygrometer is constructed, and upon which rests the formation of dew. Dew is only observed during calm and serene nights; whatever obstructs the free communication of the lower and upper regions of the atmosphere, as clouds or smoke, prevents the formation of dew, because it lessens the radiation towards the upper atmosphere. A wind likewise will interfere with the formation, as it brings warmer air in contact with the radiating body. You all will

be aware that you enjoy the most refreshing sleep during a calm night with an open starlit sky, while the air becomes sultry and oppressive when the heaven is clouded. Grass and leaves being in themselves strong radiators will cool the more rapidly, as they have only a slender communication with the earth, by which the acquired sun heat of the latter might be conveyed to them. Thus a thermometer laid on the bare ground will stand from ten to fifteen degrees higher than one suspended between the grass. For this reason grass and trees are covered with dew, when rock and stone are not, and are dripping when these are moist. In tropical countries this phenomenon must necessarily appear more striking on account of the greater diffusion of watery vapor at elevated temperatures. "In the bivouac on the edge of the forest of Cauca, between the fourth and fifth of July," says Boussingault, "the night was magnificent; nevertheless, in the forest, which began at the distance of a few yards from our encampment, it rained abundantly; by the light of the unclouded moon we could see the water running from the branches." Those of you who frequently have to repair to our mountain woods know, that if they go before the sun has moved near its meridian they are likely to have wet feet, even though it had not rained during the night, and the open plains appear dry.

What I have said with regard to emanation of heat has only reference to the nightly formation of dew, which, although of less consequence for most countries, plays a most important part in countries where it hardly ever rains, as in the district between Payta and Lima. Let us however carry our considerations a little further. If we apply the law of emanation to a large tree, we find that free radiation can only proceed from the crown of the tree. The lower branches cannot radiate towards the sky, as the upper ones act in the manner of a screen; but in the measure, as the leaves of the crown cool off, the next lower ones will emit heat to them, which these will again send off towards the sky. The same process is thus continued progressively from all the upper to the lower branches, and the amount of caloric withdrawn from a given area grows in progression. Of course the air circulating between the leaves participates in the loss. In this manner Humboldt has calculated that a trees which presents

a horizontal section of not more than one hundred and twenty or one hundred and thirty square feet, actually influences the cooling of the atmosphere by an extent of surface several thousand times more extensive than this section. What a condensing power is thus created in a tropical forest! Aside by this a priori deduction set the fact, that in wooded tropical regions about seventy per cent. of the annual average of rain falls during night, and you will find the connexion between cause and effect immediate. The effect of such an amount of cooling down, it is easily conceived, cannot be limited to the night alone, but must necessarily extend at least over a great part of the day. Thus we may contend with full reason that forests cool down the average temperature of a country, and thereby contribute powerfully to the condensation of atmospheric moisture in the shape of rain or dew.

It was long maintained by many observers that forests could have no influence on increasing the annual quantity of rain, however much they might contribute, by lessening evaporation, to keep up a due amount of running water, or to regulate the fall of rain over the different seasons. The aggregate amount of rain falling on our globe, or even within defined zones, in the course of a year, probably does not vary as long as the sun continues to send us every year the same amount of heat. But certain localities may be enabled to appropriate to themselves an uncommonly large proportion; and perhaps there prevails even in the grand chain of cause and effect in the universe, the law of commerce, that the consumption regulates the production. The quicker the atmosphere is debarrassed of its load, the sooner it will charge again. Be this as it may, experience seems to have decided the fact, that for given localities forests increase the mean annual quantity of rain. In St. Helena, where extensive plantations have been carried on for a number of years, careful observations show that the yearly average of rain has almost doubled since the time that Napoleon was a prisoner in Longwood, and the torrential floods, formerly so common, have not occurred for the last nine years. The most remarkable instance in point is probably the lake Aragua in Venezuela. This large inland lake, bounded on all sides by high ranges of mountains, which pour in their waters, and at the same

time debar its outlet, was seen and accurately described towards the end of the sixteenth century by Oviedo, who says that the town of Valencia was founded 1555, at the distance of half a league, or one and a quarter English miles, from the shore. When Humboldt visited the valley in 1800, he found the town three and a quarter miles removed from its banks. What formerly had been described as isles or shoals, were now main land or peninsula, and new isles had arisen from under the surface of the water. Rich bottom lands had been gained by the retrocession of the water, which were covered with flourishing plantations of cotton, sugar, and cacao. The whole valley bore the loveliest aspect, covered as it was with the work of industry and labor. Even the slopes of the hills had been stripped of their trees and transformed into corn-fields. The retrogression of the lake had been noticed by the inhabitants with astonishment, and was generally ascribed to a subterranean outlet. Humboldt's genius divined the true cause, and from it threw out the warning with which I introduced the present investigation. Some time after his leave the war of liberation broke out, slavery was abolished, hands and capital were drawn off for many years, and the flourishing plantations went to ruin. The maize and corn-fields on the slopes gave way again to brushwood and forest, which sprang up quickly, with that exuberance proper to the rich gem of the tropics. Twenty-five years after Humboldt, Boussingault visited the place, and now found that the water of the lake, instead of continuing to recede, had risen perceptibly, submerging the isles of new formation and swamping the cotton fields on the rich bottom lands.

Lakes without exit which receive the waters of hill-bound basins of considerable extent, are certainly the best test gauges to apply to the present question. Observations in regard to them are manifold in all continents. So Boussingault infers from numerous data, that the two lakes of Ubaté and Zimiyaca in New Grenada, two centuries ago, only formed one sheet of water. The country round them has since been cleared of woods for the supply of fuel for two neighboring salt springs. And as a contrast, he remarks the lake of Quilatoa, not far from the former, which was exactly measured by Condamine in 1738, was found by him in the same limits in 1831. This lake is situated

at an elevation of 13,000 feet, uninfluenced by the effects of agriculture and vegetation. Similar are the conclusions Saussere arrived at from a careful study of the lakes of Neufchatel and Brienne, and Morat, and those of Humboldt with regard to those of Southern Siberia. Hindostan also offers some direct instances to the point. On the high table land of the Dekan the annual rain fall averages from 60 to 200 inches; but in some of its districts, which have been extensively robbed of forests, precise observations show only a fall of 10 to 25 inches. The reckless destruction of the spice trees on some of the Banda Islands, prompted by Dutch avarice, has converted these gems of the sea into as many bare rocks. From the Cape de Verd Islands sounds this moment a cry of distress. The usual drought which since the destruction of the woods befall these now to rock and sand reduced islands, (for three successive years they have had no rain,) have again produced one of their regular effects. Famine and disease had slaughtered already six thousand of their wretched inhabitants before the beginning of April, and two thousand more, so says the proclamation of the Portuguese Governor, would fall by the scourge before the end of summer unless charity from abroad sent relief. I could multiply my illustrations, but shall conclude with calling attention to the state of climate on the Pacific coast of South America, from the Gulf of Darien down the coast of New Grenada and Ecuador, in contrast to the immediately following coast of Peru. Both are, so far as mean annual temperature, proximity to the sea and high mountains, prevailing winds, etc., are concerned, similarly situated; but the former is densely covered with forests, while the latter is remarkable for its total absence of the same. Now what is the result? The former is supplied abundantly with rain; in the province of Chocos it rains almost incessantly, while in Payta it has not [illegible]ed once in seventeen years. One tract of the Peruvian coast, [illegible]echura," derives its name from this circumstance. It is well known that the inhabitants of Lima consider roofs a superfluous incumbrance to their houses.

I might still enlarge upon the fertilizing agency of forests in fixing the carbon of the atmosphere, thereby supplying the soil with humus, or the great superiority of rain over running water, inasmuch as the

former precipitates, in the shape of carbonate of ammonia, the nitrogen so indispensable to the most nutritious parts of a plant. I could demonstrate to you that the mud which now threatens to fill your harbor, and exposes you to the heavy expense of dredging it, would for the greatest part have been retained on the inclined planes of your valleys, to become as useful as it is now annoying, by the presence of trees, if I did not fear to draw out to undue length my present discourse.

Thus the testimony in support of our main question has accumulated so as to raise it beyond all controversy. Extensive forests will render the climate cool and wet, while absence of them imparts to it dryness and warmth. The former engender a multitude of brooks and rivers, swamps and lakes, and envelope the surface in mists and fog; the rains are equally distributed over the seasons; the difference between the mean temperature of summer and winter is small; agriculture will only prosper where the aggregate amount of summer heat is large enough to mature its products—that is, in lower latitudes. The latter condition gives to the country a clear unclouded sky; the difference between summer and winter temperature becomes excessive, the winters are colder, the summers warmer; the rains either disappear or are limited to one short season, in which they fall with extraordinary violence and overflow the generally dry beds of the streams; vegetation is suspended during a greater part of the warm season. Neither of these conditions of climate is particularly favorable to agriculture. Here, as everywhere, the golden middle road is the best. Clear enough ground to allow the sun to exercise an impression sufficient to accumulate during the vegetating season heat enough to mature the seed and fruit, but retain trees in sufficient number to attract and economise the necessary supply of moisture, indispensable to all organic beings. Now it will be clear how in one place agriculture will appear to have changed a wilderness into a lovely garden, swelling with the richest offerings of Nature's choicest gifts; while in another the arid sand of the desert settles down where reckless selfishness of man, in its steady combat with Nature, succeeded in routing the latter. There we see the first stage, here the second of the grand revolution. What a terrible warning! What an amount of wholesome instruction is contained in this reflection!

No one has more forcibly expressed these sentiments than the venerable veteran amongst the eminent naturalists of our age, Elias Fries, of Lund, in Sweden: "A broad border of devastated land follows progressively the steps of cultivation. With its extension its center and cradle dies, and only in the circumference are found its green branches. But it is not impossible—difficult only for man—to repair the damage he has inflicted without renouncing the blessings of cultivation itself. He is destined to be the Lord of creation. It is true thistles and thorns, ugly and venomous plants, poignantly called dunghill plants by botanists, trace the path which man has traveled hitherto over the earth. Before him lays primitive nature in her wild but sublime beauty; behind him he leaves the desert, an unseemly, exhausted land. For childish love of destruction, or improvident waste of the vegetable treasures, have annihilated the character of nature, and, frightened, man himself flees from the scene of his misdeeds, leaving to savage tribes or the wild beast the degraded earth, as long as another spot allures him in virgin beauty. Here also, seeking selfishly his own gain, and following aware or unaware the most abominable principle, the most execrable immorality ever enunciated, "*apris moi le deluge,*" he begins anew his work of destruction. Thus the moving cultivation left the East, and earlier perhaps the desert; spoiled of its vestments, thus it abandoned the whilom beautiful Greece to savage hordes. Thus this conquest rolls with stupendous celerity from east to west, through America; and there now already the planter leaves the exhausted soil of the eastern shores, the climate rendered unproductive by the annihilation of the forests, to imitate in the far west a similar revolution. But we see also that noble men, of truly cultivated minds, commence to raise their warning voice to begin on a small scale the second more laborious task, to restore Nature to her strength and vigor. Truly, this undertaking is at present feeble, and disappears in view of the great object to be attained, but it preserves the faith in the destiny of man and in his power to fulfil it. In future man will and must succeed to free Nature, while controlling, guiding and protecting her, from the tyrannical slavery to which now he debases her, and in which he can only maintain her by a never-ending struggle against the eternally rebel-

lious. In the dim distance of the future we see a reign of peace and beauty on earth and in nature, but before man reaches it he will have to take many lessons from nature, and before all, emancipate himself from the chains of egotism."

Indeed, the attention of scientific men and governments has been seriously aroused to the importance of the subject. More than forty years the maintenance of existing and nursery of new forests has been a prominent care of the German states; not so much at first from a proper understanding of the enunciated principles as from the necessity to keep up a due supply of fuel and timber. At present however these principles are fully appreciated, and the extensive plantations on naked hill ranges or unproductive plains give ample evidence of it. A special branch of officers is appointed by governments, municipalities, and large land owners, to watch over the interests of the forest; and special schools, distinct from those for agriculture, are established and liberally endowed for instruction of pupils who devote themselves to this particular study. In Germany the schools of Tharand and Hohenheim, in connection with the name of a Cotta and Hartung, have signalised themselves. At a meeting of the British Association at Ipswich, in 1852, the subject was profoundly discussed and its importance seriously pressed on the attention of the English public. In Hisdostan the East India Company has taken vigorous steps to inhibit the destruction carried on formerly, and to fill up by plantations on a large scale the void produced by them.

So far, Gentlemen, I have entertained you at great length of time with the disastrous influence of civilization upon climate and nature at large. But where, will you ask, is the application to our young country, where civilization only dates since yesterday; where agriculture is just beginning to impress upon it the stamp of refinement and embellishment, which you before described as its first stage? I will admit for a moment the validity of your objection. In that case my answer is this: if there are no faults and wrong doings of men that need correcting, it is the short-comings of nature which I should wish to see assisted and hurried on. To speak more plainly, the gist of my foregoing remarks is, that a certain amount of perennial, high and dense vegetation is necessary to secure the interests of ag-

riculture on a permanent basis; that in other countries this condition existed but has been destroyed by man, but that our country has not reached a sufficiently advanced age, wherein nature might have accomplished its great end of covering the earth with vitalized beings, which are necessary to complete the great cycle of action and reaction on each other of earth and atmosphere.

It may safely be presumed that when the mighty fiat first sounded over the great expanse of land and water, the ocean quietly rolled its billows over the spot where now our archipelago has risen. When those immense forests of Calamites, Sigillarias and Lepidodendrons accumulated in the bottom lands of receding waters, to be submerged by the irrient flood; which again receding, left their debris covered with a deposit, thus again forming the ground-floor for a new vegetation, only to be buried and to resurge by the same process—that epoch is probably far anterior to the birth of our islands, which, besides the immediate compounds of Vulcan's subterranean fires, do not present to the geologist but formations of the latest epoch. There are even reasons to suppose that organic life began here a long time after the last configuration of the earth-crust, after it had made considerable advance in other parts of the globe. Yet our islands have a creation of their own, even peculiarly their own, from which starting nature began in her slow progress to cover every spot, as it became inhabitable for organized beings. Soon the waves scudded along from distant regions a stray cocoanut, a hard shelled bean or pandanus seed; the winds carried over the almost microscopical spores of cryptogamous plants and seeds endowed with wings or parachutes, (although the small number of plants with this kind of seed in common with neighboring countries might make us infer, *a priori*, our great remoteness from them,) birds dropped a small amylaceous or grass seed, entangled in their feathers elsewhere; and last of all came man, bringing with him the means of his sustenance—probably the banana and breadfruit. But man, after having been deposited here, was cut off from his anterior home, and therefore with, or soon after his arrival, his agency ceased. Only with the appearance of the white man another era dawned; he at once bound this isolated group to the five continents, and established a high way on which

what lived or breathed in distant regions might wend its way hither. What to accomplish, nature alone in her slow but steady way would have required hundreds of years, the intellectual, analysing, and combining power of man, penetrating and imitating her own laws, may do in as many decenniums, not indeed on such a gigantic scale as nature is wont to do it, for with all his application and energy his works will ever remain dwarfish when compared with her immense powers; but on a small scene of action, when his works are favored by the forces of nature, he can make a great impression on the physiognomy of a country.

Wherever the white man goes he carries with him his accustomed means of sustenance; the cereals follow him like his shadow. With the cereals he spreads involuntarily the seeds of weeds whose favored habitat is with them. Culinary vegetables, fruit trees, ornamental plants follow next, a great many of which soon acclimate and become naturalised. Many wild plants stick to his steps, as it were, as an indispensable accessory, although neither utilitarian reasons, nor particular aptitude for transmissibility in the seed, account for it. Thus the plantain, *plantago major*, invariably sprung up where the settler in North America raised his cottage. The Indians still call it the white man's footstep. It has followed him here. Another plant growing around you, the thorn apple, St. James's weed, *Datura Stramon*, originally an East Indian plant, spread from there with the migration of the Gypsies over Asia and Europe; from Europe the white man carried it to America, Africa, and Australia. During the great war movements of 1814 and '15 it was observed that a *Siberian Corispermum* sprung up wherever the Cossacks had pitched their tents in Germany. From America the *Erigeron canadens* spread over Europe; from there it went with the colonist to other continents. These vegetable migrations following, as it were, spontaneously in the wake of man, are as many agencies in increasing the vegetable stock of a new country; but they will fall short of the vast auxiliary which can be offered to youthful nature by the thinking mind of man, when he takes the light of science as a guide to investigate the true wants of the country, and directs her energy in comformity with the organic laws of nature.

This, my friends, let us endeavor to make our great aim on these virgin islands, where we have met together from so many parts of the world to be formed into a homogeneous community. Rare advantages accrue to us from the various combinations of elements of which our rising state recruits itself. The matured experience and knowledge of many nations is centered in your society. You are situated on the central station of important commercial lines, have direct communication with four continents and many island groups. The great variety of your climate permits you to appropriate to yourselves most productions of warm and temperate zones. Insufficiency of perennial vegetation is the only true cause which renders our Islands so far inferior in their resources to the islands of the East and West Indies. Take a survey of the different districts of our group. Those you will find the most productive which are in the neighborhood of, or surrounded by wooded mountains, as Hilo and Kona in Hawaii, and Hanalei in Kauai. Go to work then to fill up the lacunas left yet by nature. Cover the dreary dark of our naked hills with the fresh verdure of shrub and tree. Intermingle the lofty pine and cedar with the graceful acacia, the stately eucalyptus, the broad shaded tamarind and ceiba! Between them rear the towering teak tree of India, and the gigantic sequoia of California, to yield in times to come the solid timber for your nascent shipping. The dark foliage of the orange and citron, serving as foil to their golden fruit, must cluster round the cool moss-inlaid springs, which will soon bubble forth as if struck by Moses' rod, from every nook and corner between rocks, and under the fern tree, to unite in rivulets and streams which, encased in a framework of bamboo cane and lianes, will pour out of every valley, and cover with fertility the now arid and sterile plains. Then these will swell, as if Pandora's horn were emptied over them, with the turgid cane, the fragrant coffee, the speckled cotton and broad leaved cacao, while here and there a copse of wood and shrubbery will offer shelter and food to those lovely songsters whom you are so anxious to admit into your society, but who certainly will shun it, unless you build them convenient houses, and plant them food of their liking. Thus your islands, looming over the distant horizon, encircled with a columnar row of massive cocoas, graceful arecas

and stately coryphænas, will indeed appear to the approaching stranger, like a cluster of gems in the wide ocean, bidding fair to realise the fanciful dreams of his youth.

But before all, let us not neglect the vegetable treasures already accumulated by Nature's own unaided efforts. But here we are suddenly arrested in our fanciful excursion by a sad reflection. Have we really only the grateful task to assist nature, to rear into vigorous manhood the tender child intrusted to our care? Alas, our civilization only dates of yesterday, and already nature bleeds from many wounds inflicted by the cupidity and reckless selfishness of man. Where are the forests of sandal trees, which used to shed a halo of fragrance around the mere name of the Hawaiian Islands? A vast source of wealth has been dried up, a rich mine of gold—whose yield ought to have increased from year to year—has been squandered away, perhaps never to be worked again; for what little there is left of it, mostly crippled shoots of old trunks, bids fair with its slow growth to be stifled and crowded out by meaner, more precocious neighbors. Another source of wealth, whose importance will only be appreciated when our neighbors of California and Oregon have made sufficient progress in industry to be able to dispense with imported furniture, exists in the koa tree, *Acac. heterophylla.* Its many fine qualities for cabinet work make it equal to mahogany; in durability of color it excels the same. If we go on to fell these trees without proportioning the increase to the consumption, this source of wealth is likewise doomed to extinction,—a fate which has already befallen the splendid tamani, *Calophyllum inophyllum*, of which only a few relics exist on Molokai. Has any one of you met with a fresh plantation of cocoa palms? How is it that, for instance, here on Oahu the magnificent and productive bread-fruit tree is so little cultivated? Is there a tree more picturesque to the eye, offering at the same time a liberal shade and a most nutritious, pleasant fruit? In the valley of Hanalei grows a tree, (of the genus *Xanthoxylum*) called by the natives makehana, whose seeds, *seed-capsules*, and leaves are impregnated with a spicy aroma similar to cardamon, but sharper to the taste. It is, to my knowledge, not found in any other locality, and to all appearance is indigenous. Unless taken care of, it may be

lost, sooner or later, whereas, if propagated and protected, it is likely to become an important addition to the number of known spices, and a valuable article of export.

It cannot be denied, that in many places the domain of forest has been seriously encroached upon by man, and more by cattle. In the February number of the Sandwich Islands Magazine, an intelligent observer calls our attention to the startling fact, that the whole plateau of Waimea, in Hawaii, over twenty miles in length and five in breadth, has been spoliated entirely of its original forest, which only twenty-five years ago formed an impenetrable thicket, by the agency of wild cattle ; not a tree or shrub is to be seen now from Kawaihae to the opposite sea-shore. Mark the effect: for the last nine months, as I am informed, they have not had a rain shower. The extended plain, which, after having been divested of its trees, probably was supposed to yield abundance of pasture to flocks and herds, is parched and cracked ; not a blade of fresh grass is to be seen ; clouds of dust have taken the place of rain-clouds, and the cattle to escape starving, have to repair to the side valleys of the Kohala range and Mauna Kea. Do not object to me, that we have had an unnsually dry year over the whole group, for I have yet to learn that any other region as elevated as Waimea, 4000 feet above the level of the sea, which has retained its native foliage, has been visited by a similar drought. It is alleged that the climate has improved since this process of destruction was carried on. It is true, raw mists and chilly winds are not so frequent there now, and the squally mumuku has ceased to blow, but perhaps the latter might have been averted, not by killing the vegetation on the high plains of Waimea, but by starting a new one on the slope of Kawaihae, which would have reduced the excess of heat peculiar to that desolate lava region. Besides, it may be necessary to remark here, that salubriousness and productiveness of a country do seldom go hand in hand. For, taking as a measure for general salubrity, the average per centage of deaths by consumption, we find that the healthiest spots until now ascertained are neither Rome, nor Madeira, nor the Provence, but the rainless coast of Malaga in Spain, those parts of Egypt above the Delta, nearest the desert, and, before all, Algiers, where, according to Drs.

Haspel and Jourdain, only one death in seventy-five is due to consumption, while in Paris and London the proportion stands one to five.

During my short stay in Australia, I had ample opportunity to notice the disastrous effects of cattle and sheep on vegetation. In South Australia, for instance, the original flora has almost disappeared on the rich plain between the sea and coast range. Even the formerly impenetrable thicket of the scrub along the river Murray, begins to feel its effect. Perhaps that country, which, almost shadeless on account of the perpendicular inclination of the plane of its foliage, whose tough, leathery qualities, almost unfit it for a copious perspiration, lacks of rain for eight months in succession, will in distant future have to regret that its early colonists began their work of civilization with flocks and herds. Of all the destroying influences man brings to bear on nature, cattle is the worst. In what are now the Kirgisian steppes, between the Altai and Ural mountains, Humboldt found a remarkable succession of lakes, from whose relative positions to each other, in combination with the geographical formation of the country, he concluded that they formerly had been united in one sheet of water, which covered the vast plain. The great traveler does not refer to great physical revolutions which might have opened an outlet to these accumulated waters, but from more direct observation made in the neighboring steppe of Bareaba, he is led to believe that the presence of man has to account for it. A retrospect in history however shows us, that this is part of the very country where lived the Scythians, from where issued the Huns, Mongols and Turks, all nomadizing tribes, which to our knowledge had only a faint acquaintance with agriculture. Herds of cattle and horses were their sustenance, formed their wealth. Is it not legitimate, therefore, to ascribe to them this great change in the physical physiognomy of this country ?

Let us take a warning from such ominous examples. The small area of our islands is too valuable to be devoted to cattle rearing. Allow them to multiply for all the legitimate purposes of the dairy, home consumption and supply to the shipping. But what goes beyond is of evil. If we rear them for the sake of their hides and tallow, I imagine the expense of producing these is too great. We forfeit by

it the vital sources of our soil. It is even questionable, if by fostering an export of cured or dried meat, we promote our true interests. The multiplication not only, but the existence of wild cattle and goats ought to be set a stop to. Where the interests of agriculture and cattle rearing conflict, the former should be protected in preference.

I have not touched yet upon the other evil, arising from the destruction of forests—scarcity of fuel. A few remarks will suffice. In our community this evil is already felt severely at the present time; the high price of fuel attests it. What we consume in Honolulu, has for the greatest part to be brought from other islands. And yet we can never flatter ourselves with the hope to find relief in that great resource which unexpectedly came to help other countries over their impending difficulty—fossil coal. For, adopt either of the two propounded theories about the geological history of our islands, you will arrive at the same result. If you adhere to the hypothesis of a late rising above the surface of the sea, this must have taken place in the latest epoch of the consolidation of our earth's crust; for only coral limestone, with detritus and conglomerations of the basaltic rock cover the lower surface of our basaltic hills; no rocks of the transition or secondary groups which furnish the beds for fossil coal are seen anywhere. Do you attribute an older age to a Hawaiian, or if you will stretch your imagination a little farther, a Pacific Continent, which by gradual subsidence has left the peaks of its highest ranges as our present archipelago, then those plains and estuaries, where ancient vegetation either grew or became accumulated by the rush of waters, must lay now submerged deep beneath the rolling swell of the ocean. Thus our only resource will have to be found in our forests. A little further reflection on our part must still more forcibly impress us with the importance of the subject. The number of species of trees as are well adapted to produce heat for economical purposes, is very limited. The prevailing character of our forests is that of bush and shrub; most of the taller trees are of so light a texture as to be unfit for heating. How does it stand with the fuel trees mostly in use? The ohia lehua (*metrosideros polymorpha*) has probably in former times been the most prevailing tree over the group. It is not

now. I have seen only few scattering rudiments of it, where there are unmistakable indications that formerly it covered extensive dimensions of ground. But the demand for fuel must necessarily grow in proportion to the increase of population and the concomitant necessary establishment of workshops and factories. I do not wish to be understood as favoring the introduction of manufactures at large in our fair islands; on the contrary, I most heartily deprecate such an idea; besides, I consider its realization impossible. But there are certain branches of industry a well organized community cannot dispense with. These are either such as enter into the primary necessities of daily life, but cannot on account of undue bulk be shipped without raising the price quite beyond proportion, or such as can be produced with small labor on the spot where the raw material is raised. To confine myself only to one example. We build our houses of the very material least suited to a warm climate, of wood. Not only does it oblige us to live, or rather to swelter, in an atmosphere often heated almost to the temperature of blood, but it exposes our fast filling villages before long to a great and inevitable calamity. Coral rock, the only other material on hand, commands on account of the great labor its cutting requires, such a price as to be only within the reach of very few. Besides, it could only be used to advantage for larger buildings. The only good building material which ought to be general amongst us, and at the reach of every one, is bricks. Transport from the United States raises their price to six or eight times their original value. Good raw material is in abundance amongst us; the alluvium on the banks of the river and the deposit in old taro patches chiefly consists of a very stiff clay, the common product of disintegration of basaltic rocks. On the banks of rivers it may be obtained, almost pure, unmixed. On inquiry why no bricks were made here, I have been told that attempts had been made, but the high price of fuel obliged the undertaker to abandon the enterprise as unprofitable. Part of the preceding remarks will also refer to pottery. With regard to this branch of industry it may be of use to record, that in Teneriffe, in order to obtain the clay of which those valuable porous water jars, *gargolettas*, are made, the natives build retaining walls at the foot of the mountains, to collect the water which deposites this precious detritus of their trachytic rocks.

Before I conclude, I cannot but refer briefly to the shelter well established forests will afford against high wind, by common consent one of the greatest impediments to the successful pursuit of agriculture and horticulture with us. Forests, located with a special regard to the prevailing wind, would be highly beneficial to circumscribed localities. But allow me in this place to advance a hypothesis, according to which, if it should prove correct, the influence of forests in modifying the strength and current of winds, would be of more general application. Honolulu with its environs offers a good example for illustration. The ordinary trades that strike over the plain of Koolaupoko on the windward side, are broken by the abrupt circular range of mountains which include it like an amphitheatre. Their only outlet of this great *cul de sac*, is the deep notch over the Pali of Nuuanu, elevated eight hundred feet above the sea, into which they crowd with concentrated strength. One should suppose that the lower currents, which swept over the plains of Koolau at a less elevation than eight hundred feet, would, in passing the Pali, assume an upward direction, while the upper ones would continue a horizontal course. Such being the case, they ought to pass at least eight hundred feet over our heads, while in reality, as soon as they have traversed the Pali, they take a downward course and sweep over the surface of Nuuanu Valley down on Honolulu. As a general rule our nights and mornings are calm; the trades appear in Honolulu about ten o'clock in the morning, and last to five or six o'clock in the afternoon; that is, just as long as the sun's heat rarifies the atmosphere over the lower part of Nuuanu and the plain. If my recollection serves me right, the wooded part of the valley nearest the Pali is generally calmer than any other part of it; the traveller in approaching the Pali, receives the violent gust of wind quite suddenly when immediately near it. May it not reasonably be supposed, that if we lessen the rarefication of the atmosphere in the lower valley and on the plain, by cooling it down through the presence of trees, we can succeed in giving to the ordinary trades a less downward inclination, to raise it, if not eight hundred feet, at least some fifty or sixty feet over our heads? We should still have breeze enough to make us feel comfortably, but our trees would not shed their fruit, and there would be

a great deal less of rheumatism in our village. Many other parts of the leeward side of our islands are similarly situated to Honolulu.

It remains for me only to make a few remarks on the practicability of a plan of such extent, as the one propounded undoubtedly is. Of course it cannot be accomplished in one year, or a couple of years. In northern latitudes the raising of a new forest, even of fast growing trees, will take from fifteen to thirty years. Here our patience will not have to be put to such a stretch. Where, as I had occasion to observe in my garden, some species of Acacia will grow in little more than one year to the height of twenty-four feet, from the seed, Melias sixteen feet, and Casuarinas ten feet, there it may be admissible to feel somewhat sanguine on the subject. It is my opinion that on the banks of rivers and in low wet places our end may be attained in less than four years. In dry, unsheltered plains, bare hills or elevated districts, it may take longer time. Nowhere, I imagine, we shall have to wait more than six or eight years before some results are obtained. The work cannot be done by a few individuals; the whole nation must lay hand on this great national work. And if it were for no other reason than this, I hail with joy this festival occasion which for the first time has assembled our native friends of the National Hawaiian Agricultural Society with us. The same idea has called their society into life, as ours; the same zeal animates them to realize it, to embellish and enrich the fair land of their inheritance. Let every member of our societies enter an engagement to plant yearly a certain number of trees; let our society import seeds from abroad in quantities for distribution, particularly of such trees as are of some economical use; but let us make an immediate beginning with the vegetable treasures, native or domiciliated on our soil. To prevent failures from error in judgment, Government may designate competent persons whose duty it shall be to select and assign places where a beginning may be made with the best advantage, and appoint wardens for the protection of the young plantations. Indeed, amongst all the monuments a wise and great ruler may erect himself for posterity, which are more beautiful and durable than those that will shed blessing and happiness on his nation's children and grandchildren? Which are greater than those which comprise at once every one of

his subjects and every square foot of his kingdom? Which more admirable than such as founded by an enlightened sagacity, penetrating the hidden future, tend at once to avert unseen calamities and secure unhoped for happiness? Works of this character, not their wars, secure to the name of a Henry IV., Peter and Frederick the Great, a grateful abode on the lips of the humblest peasant of their nations. Thus amongst the claims on posterity's gratitude, the great Akbar founded himself in India, one, not the smallest, consists in his directing "to plant trees of every description on both sides of the canal down to Hissar, both for shade and blossom, so as to make it like the canal under the trees in Paradise, and that the sweet flavor of the rare fruits may reach the mouth of every one, and that from those luxuries a voice might go forth to travelers, calling them to rest in the cities, where their every want will be supplied."

At the conclusion of the above address, a vote of thanks was passed to Dr. Hillebrand, and a copy requested for publication.

A vote of thanks was passed to the Chair, when the Society adjourned till to-morrow to attend the Annual Fair and Exhibition.

WEDNESDAY, July 30, 1856.

The Fair was held this day, at which the Society attended. The following are the Reports of Judges, appointed to examine and award premiums upon articles exhibited:

JUDGES' REPORT ON HORSES.

HONOLULU, July 30, 1856

Mr. President and Gentlemen of the R. H. Agricultural Society:

The undersigned, appointed Judges of Horses exhibited at the Fair held to-day, beg to report, that out of eighteen competitors, they have selected the following as worthy of prizes:

IMPORTED STALLIONS.

First prize. "Oregon," owned by Capt. J. Meek, a certificate.

Second do. "Glencoe," do. do.

NATIVE STALLIONS.—*Five entries.*

First prize. "Democrat," a very fine animal, exhibited by Dr. S. P. Ford.

Second do. "Young Oregon," by Mr. Gulick.

NATIVE MARES.—*Three entries.*

First prize. "Scarlet Feather," 3 years old, exhibited by Mr. Thomas Cummins, decidedly the handsomest animal on the ground.

Second do. "Jilt," bay mare, also owned by Mr. Cummins.

1 YEAR OLD MARES.—*Two entries.*

We award this prize to Capt. Meek's filly "Fanny," but had some hesitation in deciding between her merits and those of a very promising filly, "Laurel," exhibited by Mr. Cummins.

NATIVE GELDINGS.—*Six Entries.*

We award this prize to "Emerald," exhibited by Mr. R. Moffitt, but wish also to mention favorably as worthy of commendation, Capt. Meek's "Frank," Mr. Dowsett's "Robin," and two bay horses exhibited, one by Mr. Andrews, and one by Mr. Sumner.

There was also exhibited a pair of carriage horses in harness, by Mr. Gulick, and though there was no competition, we consider them entitled to a premium. There was no imported mare exhibited, and for the prize for one year old stallions, there was no entry.

M. C. MONSARRAT,
D. C. WATERMAN,
R. ARMSTRONG.

JUDGES' REPORT ON CATTLE.

HONOLULU, Wednesday, July 30, 1856.

The undersigned Judges award as follows:

To No. 1, Fat ox, over four years old, (Mr. Armstrong,) bronze medal or $5.

To No. 41, Imported Bull, (J. Meek,) silver cup or $15.

To No. 42, Native Bull, (C. G. Hopkins,) silver medal or $8.

To No. 43, Native Cow, (C. G. Hopkins,) silver medal or $8.

To No. 44, Best Fat Steer, under 4 years old, (C. G. Hopkins,) bronze medal or $5.

No. 45, Second Best Bull, (C. G. Hopkins,) bronze medal or $5.

REMARKS.

The cattle exhibited are of good quality. Only one of a kind were brought on to the ground, which simplified the matter of deciding between the merits of the different animals, and leaves no room for complaint on the part of those who have taken pains to bring their animals to add to the interest of our annual exhibition.

We saw several yoke of oxen, and other cattle on the ground, but were informed that they belong to natives, members of the Native Agricultural Society, who have their own Judges to award premiums.

The want of competition in this department is to be regretted.

Respectfully submitted.

G. P. JUDD,
B. F. HARDER.
F. P. MANINI.

JUDGES' REPORT ON BUTTER AND CHEESE.

To the President of the R. H. Agricultural Society:

SIR,—Your Committee of Judges on Butter and Cheese, have great pleasure in reporting that they have examined the various qualities which have been exhibited, and beg to submit the following award of prizes, viz:

To Lot 45, the first prize for the best three kegs of Butter (Sparks).

To Lot 31, the second prize. (H. A. Widemann.)

To Lot 42, the prize on Cheese. (Sparks.)

There were but four exhibitors of Butter, and one only of Cheese. The qualities were all good, and very creditable to the producers.

Respectfully submitted,

B. PITMAN,
SAM. SAVIDGE,
R. MOFFITT.

JUDGES' REPORT ON SUGAR AND SYRUP.

The Committee to whom was allotted the duty of judging the Sugar and Syrup exhibited at the Agricultural Fair, beg leave to report, that after having duly examined the four sumples of Sugar exhibited, they award to No. 27 (Dr. Wocd) the first prize, and to No. 29 (Lihue Plantation,) the second prize.

There was only one sample of Syrup exhibited, and which was labeled "From the Brewer Plantation," this being of superior quality, to it is awarded the premium. Respectfully,

GEO. A. LATHROP, for himself and
D. M. WESTON.

JUDGES' REPORT ON FLOWERS.

The undersigned, appointed by the R. H. Agricultural Society as Judges to awurd the prizes on Flowers exhibited for competition at the Annual Exhibition held at Honolulu, on Wednesday, the 30th of July, 1856, beg respectfully to report as follows:

We award to

No. 15, The first prize, (Mrs. Hillebrand) being No. 114 on the list of premiums, cup or $10.

No. 16, The second prize, (Mrs. Hillebrand) being No. 115 on the list of premiums, medal or $8.

No. 5, The best Floral Design, (Miss Anna McKibbin) No. 117 on the list of premiums, medal or $8.

No. 7, The best Boquet, (Mrs. Wm. Ladd,) No. 120 on the list of premiums, vases or $5.

No. 9, The second best Boquet, (Mrs. O. H. Wood) No. 121, boquet holder or $3.

No. 1, The best arranged Basket of Flowers, (Mrs. J. H. Wood,) No. 122, boquet holder or $3.

No. 3, The second best arranged Basket of Flowers, (Mrs. Stangenwald) No. 123, book or $3.

No. 11, The greatest variety of Roses, (Mrs. Makee) No. 124, book or $3.

And we recommend as worthy of a prize, a fine collection of Verbenas, (No. 12, Mrs. Makee) also a vase containing Coxcomb and Double China Pinks, (No. 14, Mrs. Makee.)

All of which we respectfully submit.

WM. FELL,
THOMAS BROWN,
CHAS. F. GUILLOU.

The undersigned take the liberty, after conclusion of the above report, to notice in terms of strong commendation a collection of Flowers, marked No. 20, (Mrs. Everett) which unfortunately arrived after termination of the duties assigned to the Judges. Had it come in time, they have no doubt it would have received a high premium.

CHAS. F. GUILLOU,
THOMAS BROWN.

JUDGES' REPORT ON DOMESTIC MANUFACTURES.

HONOLULU, July 30, 1856.

GENTLEMEN,—The undersigned, Judges on Farming Implements and Domestic Manufactures, at the annual exhibition of this day, beg leave to present their Report.

Beforehand, we wish to express our regrets, at having observed so little competition, nay, in most branches of this department no competition at all. Of a variety of articles, which to our own knowledge are now and have been for years manufactured on these Islands, not any samples were exhibited, such as Arrow Root, Pickles, Cigars, Salt Beef, Salt Tongues, Bacon, Straw Hats, Brooms, &c. Domestic Manufactures of all kinds compose certainly a branch of industry, the development of which is decidedly very desirable and cannot be urged upon the people too eagerly. Surely, in the list of premiums, domestic manufactures are represented in great variety and with great liberality; why then such a limited degree of competition was exhibited to-day, we are unable to explain. May the interest which

the people ought to take in the Society, but which indeed seems to have decreased considerably in this department as well as all others, in comparison with former years, revive henceforth and bring forward at the next show a lively competition, leaving the meagre exhibition of this year far behind.

Of all the farming implements for which prizes have been set apart in the catalogue, we find not a single article exhibited. We are the more pleased, however, to notice several pairs of Ox Bows, a new article, the manufacture of which at these islands was entirely unknown to us heretofore. The Board of Managers, we are inclined to think, were like ourselves, not aware of the manufacture of this article within this Kingdom, and did for this reason not include any premium for Ox Bows in the catalogue. We never supposed that there was any kind of wood on the islands suitable to be worked into Ox Bows, but are now informed that those exhibited were made on Hawaii, from a wood which the natives call *neneleau*, bearing a similarity to the sumac; they have been tried by Mr. Metcalf, who recommends them as very superior, and authorizes us to say that he uses them entirely. They certainly do appear to us very recommendable in shape as well as quality, and we think they are well worthy of the premium of a bronze medal or $5.

We notice a lot of Niihau Mats exhibited as No. 62; they are the only ones exhibited, and as they are not as superior as we have seen them formerly, we are constrained to withhold the premium.

A very nice sample of domestic manufactured Soap is exhibited, and although there is no competition in this line, we feel bound to recommend for this lot (No. 6,) the premium mentioned in the list: we leave it however to the board of Managers to judge in their discretion about it. The Soap exhibited is certainly a good quality, and if any branch of industry ought to be encouraged, it is the manufacture of this useful and needful article.

Nos. 19, 20, 21, are samples of Salt, of a decidedly good quality; but there is no competition shown, and as we do not think it so very superior to the samples of the article from the same works in former years, we do not feel justified to award the premium. Moreover, we think that the Salt from the same works as the sample exhibited now

(Puuloa) took the premium at last year's exhibition. We may mention that we noticed on the native table several calabashes of Salt, some of which was of very good quality; but the Puuloa will seem to us superior to all of them.

Bread made of Hawaiian flour was exhibited in three different lots, all of which have undergone a fair trial and careful examination by us. It certainly ought to reflect credit upon the respectable bakers if we say that we should have liked to indulged in the consumption of the samples to the full extent of our appetites, had not the duties of our office limited our time and called us elsewhere, much against our wishes. In awarding prizes, we grant the first premium cup, or $10, to Lot No. 5; the second premium, medal or $8, to Lot No. 60; and the third premium, medal or $5, to Lot No. 54.

We mention samples of nice Poha Marmalade, Peach Preserve, Pineapple Preserve and Guava Jelly, but there being no competition we cannot award any premium to either of them.

Of tanned native Goat Skins several samples were exhibited, all of surprisingly good appearance. We award the prize of a bronze medal or $5, to Lot No. 48—tanned native goat skin finished on the grain.

Of tanned native Cowhides No. 49 takes the premium of a bronze medal or $5, being two sides of sole leather, which would do credit to any tanner in the old countries.

The lot of Shoes which was exhibited was good, but nothing superior.

We notice a very superior Saddle, manufactured at the Islands, a beautiful piece of workmanship; and although there was no competition, we cannot but strongly recommend to the Board of Managers to award to it a premium of a bronze medal or $5, as we think it would defy competition anyhow.

Bridle and Bit, both manufactured at these Islands, are certainly excellent, and fully entitled to a premium of $3 or a book.

We now come to several articles, the manufacture of which is more or less new on the Islands, but bids fair to become a very important branch of industry in the course of time.

No. 78 is a sample of a kind of Meal or Farina, prepared from the

root of the "*Iatropha Uanihat.*" It resembles the tapioca and cassava of the Portuguese. Mr. Oudinot, the exhibitor, informs us that he has prepared a sample lot of about 100 lbs., and that the natives are manufacturing it on Maui in place of arrowroot, its cultivation and preparation being much easier than that of the latter. We are sorry not to have seen any arrowroot on exhibition, to enable us to draw a comparison between the two kinds of meal. Certainly the iatropha meal is worthy of notice, and its preparation ought to be encouraged.

Small samples of *Fecula* (or farina), made from sweet potatoes and from kalo, which are exhibited, are of a very interesting character, and worth mentioning.

We now mention the several samples of Kukui Oil, exhibited in its different stages of refinery. Lot No. 4 is by far the best among them, and we do not hesitate to say that we are of opinion the Board of Managers will do but justice by awarding to this lot a premium. Kukui oil is an article the importance of which is an acknowledged fact. Its manufacture ought to be encouraged, and we are sure whatever quantity will be brought to market will find a ready sale. We notice a small sample of the same kukui oil as this lot, No. 4, refined by a peculiar process of Dr. Frick's.

We see two boxes of Indigo, exhibited by Dr. Frick, and take the liberty to seize this occasion to make some remarks in regard to this article, which, we regret to say, may perhaps in some degree darken the favorable light in which the manufacture of this Indigo has appeared up to this time. We would say that samples of this same Indigo, manufactured last year, were at the special request of Dr. Frick, forwarded to Hamburg for examination, and the result has been anything but satisfactory. We only mention here that it was pronounced to be an article somewhat resembling the Indigo, but far from being Indigo itself; the article had no value at all in the market of Hamburg, where large quantities of real Indigo are bought and sold during the year. Not to discourage however the bold pioneer of the Indigo manufacture on these islands, we will state that there are now on the way to the islands in the brig "Emma," a few seroons of good Guatemala Indigo, as a sample, to furnish us with an

idea of what good Indigo is. We ourselves do not in the least profess to be judges of Indigo; in the above we only quoted the communications of our friends in Hamburg, whose knowledge of the article is beyond doubt.

A very fine sample of Cotton was received at the Exhibition after most of the Committees of Judges had already finished their work and left the rooms. By leave of the President we will make a few remarks about it. It is certainly a very superior article, very white, of long staple and very soft. If such Cotton can be produced on the islands, and the fact lies now before us—its cultivation ought certainly to be promoted in every possible manner. Mr. Oudinot, the exhibiter, informs us that hitherto he has cultivated only a small quantity as a trial experiment. He speaks very favorably of the Cotton trees found on Maui, and feels confident that planters could pick for five successive years from the same tree without any decrease in the quantity or quality of the Cotton.

We recommend this branch of domestic produce to the special attention of the Board of Managers.

Respectfully submitted, GUST. REINERS,
W. A. ALDRICH,
H. S. HOWLAND.

JUDGES' REPORT ON EMBROIDERY.

The Committee on Embroidery would respectfully report that the specimens placed before them for examination were very few, and they find less difficulty in coming to a decision than in former years.

We award a premium of $3, for each of the following:

A wrought Collar, marked No. 1, (Miss Gilson.)

A bunch of Flowers wrought from the feathers of the Albatross, (Miss Montgomery.)

An ornamental Work-box, with boquet of leather flowers, (Mrs. Melchers.)

Pair knit Stockings, (Madame Judd.)

The Committee have to regret the fewness of articles exhibited,

and would state that only in the first premium awarded was there any competition.

H. M. WHITNEY,
EDUARD MOLL,
JOHN LADD.

HONOLULU, July 30, 1856.

JUDGES' REPORT ON COFFEE.

The undersigned Judges on Coffee, beg to report as follows :

There were four samples of Coffee shown—Nos. 17, 34, 39, and 40.

To No. 39, for a bag of Coffee, sample of over 2000 lbs, purchased by P. Cumings from natives in Kona, Hawaii, and shown by Aldrich & Bishop, we would award the first premium, but it is a question whether it comes within the rules of the Society for us to do so, and we beg to refer it to the Society or the Board of Managers to decide.

To No. 17, two bags, about 100 lbs., sample of about 5000 lbs., shown by Rev. T. E. Taylor, of Kona, Hawaii, we award the second premium. We do not know whether the Coffee was raised by the exhibitor or not, and therefore the same question would arise as in the foregoing.

No. 40, was a bag of good Coffee from the plantation of Charles Hall, of Kona, Hawaii, taken indiscriminately from a large quantity; not as well cleaned as the samples 39 and 17, and said to be inferior to the general run of his entire crop.

No. 34, a box containing about 30 lbs., (less than the quantity required by the rules) sample of 3000 lbs., exhibited by Benj. Pitman, as a specimen of Hilo Coffee, and not for competition. It was very even in size and color, and well cleaned, and much superior to that usually received from Hilo.

It would be pleasing to those who take an interest in the Society, and to those who exhibit Coffee, if all the producers would send samples to the Fair.

Respectfully submitted,

CHAS. R. BISHOP,
B. PITMAN.

JUDGES' REPORT ON SHEEP AND SWINE.

To the President of the R. H. Agricultural Society:

SIR,—Your Committee to act as Judges of the comparative merits of Sheep and Swine exhibited at the Fair to-day, beg leave to report,

That they have awarded as follows:

Premuim No. 26, South Down, "Boki," (Cummins.)
30, Native, numbered 30, (Moffitt.)
31, two Merinos, " 31, (Sparks.)
32, 3 Fleeces, " 26, (Moffitt.)
33, Boar, " 33, (Meek.)
35, Sow, " 35, (Meek.)
37, to the interesting family of 35, (Meek.)

Your Committee would say that there were two Swine in the pens that were not beat by any on the grounds, but as we are limited by our instructions to "imported" Swine, the beautiful Berkshires of Captain Meek can only receive our highest commendation. They are an honor to 35, and 37 will not fall far below them.

Several fine wethers from Hawaii, exhibited by Mr. F. Spencer, were noticed, which we judge to be of fine quality.

HENRY PRENDERGAST,
W. GOODALE,
P. J. GULICK.

REPORT OF COMMITTEE ON GRAIN, SEEDS, AND FIELD-CROPS.

HONOLULU, July 30th, 1856.

Mr. President and Gentlemen of the R. H. A. Society:

Your Committee to whom was assigned the duty of deciding upon the merits and awarding premiums for the best Grains, Seeds and Field-crops, offered for premium this day, would respectfully report and award as follows:

GRAINS AND SEEDS.

Best sample of wheat, No. 97, (Kekaha.)
2nd best do., No. 93, (Gower.)
Best 20 ears Indian corn, No. 44, (Archer.)

Best bushel of Indian Corn, No. 1, (Knudsen.)

Best white beans, No. 87, (Gower.)

Best variety of do., Nos. 87 and 92, (Gower.)

Your Committee have noticed with pleasure, and would recommend to the favorable notice of the Society, a specimen of China sugar-grass, exhibited by Dr. W. H. Hillebrand, which has lately been introduced into the United States, Demarara, &c., with prospects of advantage to individuals and nations.

Your Committee learn with regret that the drought of the present season has so shortened the crops in the principal grain growing districts, as to prevent farmers from competing for premiums on crops of wheat, barley, oats, Irish potatoes, broom-corn, &c., in accordance with the terms stipulated by the Committee of Management.

They also regret feeling that these terms have not been sufficiently complied with by Mr. Archer, of Waimea, Kauai, who has entered the list of competitors for the premium on the best field of tobacco, but having failed to comply with the terms of the Board of Managers, your Committee can only recommend his specimen to the favorable notice of the Society.

For the best crop of Indian corn, we take pleasure in awarding the premium to Mr. Knudsen, of Waiawa, Kauai, who has not only furnished a specimen of superior corn, but also the required certificate, and detailed account of cultivation, cost of production, &c. &c.

Respectfully submitted.

J. H. WOOD,
R. ARMSTRONG,
Committee.

JUDGES' REPORT ON FRUITS AND VEGETABLES.

HONOLULU, July 31, 1856.

Mr. President—Gentlemen:

Your Committee whom you entrusted to award premiums for the best samples of fruits and vegetables, beg leave to state that they regret to find their duty so easy, on account of the small variety ex-

hibited. They wish also to state that the natives deserve, in their opinion, great credit for their successful efforts to compete with foreigners.

We found the following numbers only to be entitled to premiums, viz:

73—Best and greatest variety of vegetables raised by exhibitor, Silver Cup or $10, to Jas. Makee.

74—2nd best do. do., Silver Medal or $8, to F. A. Oudinot.

75—Best sweet potatoes, from foreign seed, Silver Medal or $8, No. 89.

76—Best 10 heads kalo, Bronze Medal or $5, No. 83.

80—Best 12 white table turnips,	Book or	$3,	No. 66.
81—Best 12 carrots,	do.	do.	No. 8.
82—Best 6 table beets,	do.	do.	No. 10.
83—Best 12 radishes,	do.	do.	No. 67.
92—Best 3 squashes,	do.	do.	No. 3.
93—Largest squash or pumpkin,	do.	do.	No. 3.
96—Best variety of potatoes,	do.	do.	No. 89.

FRUITS.

99—Best dish of grapes, Bronze Medal or $5, No 80.

103—Largest watermelon,	Book or	$3,	No. 15.
108—Best bunch bananas,	do.	do.	No. 85.
109—2nd best do.	do.	or $2,	No. 82.

Your Committee were much gratified in noticing specimens of pie-melons, cocoa, &c., for which no premiums were offered, and it is presumed none expected, but offered as evidence of interest in our institution and exhibition.

We conclude our report with the remark that the exhibitors of pomegranates and dates, should be rewarded for offering those fine fruits.

E. HOFFMANN,
J. H. WOOD.

JUDGES' REPORT ON MISCELLANEOUS ARTICLES.

The Committee on Miscellaneous Articles exhibited at the Fair have found their duties circumscribed within a narrow compass.

Indigo and Saddlery, which the "Miscellaneous Committee" of last year had under consideration, were this year more properly referred to the committee charged with the examination of domestic manufactures. Flour naturally fell under the cognizance of the same committee.

Some very fine fleeces of wool were exhibited, well entitled to the premium which we understand another committee—that on Sheep and Swine—has awarded. The enterprising wool-growers of the Islands are sure, in the end, to meet a proper reward.

The excellent cotton exhibited by Mr. F. A. Oudinot, of Lahaina, has also been properly judged and commended in another quarter. It may not, however, be out of place for us to observe that in our estimation, the production of cotton deserves more attention than has heretofore been bestowed upon it. There are many reasons to believe that it might easily be rendered one of the leading staples of the kingdom.

The indigenous cotton tree of the Islands is perennial, but, according to Mr. Oudinot, age diminishes the fineness of the texture of its product.

This is evident from the specimens he has presented, taken from trees respectively of five months, one year, two and a half years, and fifteen years' growth. Between five and six months only are requisite at Lahaina for producing a crop, and when the tree begins to bear, it is ever displaying at the same time its flowers and opening its matured bolls. It is supposed that a single acre of ground will, under ordinary circumstances, produce at least one thousand pounds of cotton in the course of a year. This is said to be considerably beyond the production of an acre in the United States, where the plant is annual.

The specimens we have examined will compare favorably with the best Sea Island cotton produced.

Mr. Oudinot deserves much credit for his energy, and if he perseveres in his laudable efforts he will, no doubt, not only pave the way for his own fortune, but open the road of fortune to others.

The encouragement of cotton production is an object worthy of at-

tention by the Government and by the agricultural societies of the kingdom, and we hope to see hereafter a greater amount of interest displayed in it.

These brief references may perhaps be considered as an encroachment upon the field of duty assigned to others, but we hope no "miscellaneous" or special offense will be taken on account of our very moderate and unobtrusive effort to reclaim a few subjects of jurisdiction, which, until "after the fair," we supposed peculiarly vested in the Committee on Miscellaneous Articles.

It only remains for us to submit a few observations in regard to a couple of articles falling, *beyond all doubt*, under our proper notice. This we conclude, because we have not heard of their reference to other committees.

The gold fishes exhibited by Dr. Judd were old acquaintances; they met with favor from all who saw them, and if they cannot receive a premium, they deserve—what they abundantly secured—admiration.

The koa board, eight feet in length by three feet four inches in breadth, exhibited by Mr. J. L. Merritt, of Maui, attracted much attention. Mr. Merritt informed us that some of the middle boards from the same cut of the tree were at least four inches wider. There is no handsomer wood in the world for cabinet work than the koa; and the public was no doubt pleased to see so fine a specimen of it presented for examination.

We are not aware of any thing among the "miscellanies" of the Fair which require from us an expression of opinion. There are apparently no premiums for us to award, although perhaps by our own assumption, there have been some merits to discuss. We do not regret that the sphere of our duties has been limited, for we are sure that "abler and better men" have judged more satisfactorily than we could have done of matters heretofore confided to the Committee on "Miscellaneous Articles." Respectfully submitted.

DAVID L. GREGG,
R. C. WYLLIE,
GUST. C. MELCHERS.

HONOLULU, July 30, 1856.

JUDGES' REPORT ON POULTRY.

The exhibitions in this Department were very few, but the Committee agree in awarding a premium to each of the following:

No. 11, a Cock and two Hens, (H. G. Crabb) bronze medal or $5.

No. 3, a pair of Muscovy Ducks, (M. C. Monsarrat) book or $3.

No. 2, a pair of Geese, (G. Melchers,) book or $3.

Respectfully submitted,

EDWARD SPARKS,
JOHN LADD,
H. M. WHITNEY.

Fro[illegible] ding reports, the following Synopsis of Premiums [illegible] nce the articles which took premiums, and the per[illegible] they were awarded.

LIST OF PREMIUMS AWARDED IN 1856.

J. Meek, best imported Bull, cup, or $15.

C. G. Hopkins, best native do., silver medal, or $8.

C. G. Hopkins, 2d best do. do., bronze medal, or $5.

C. G. Hopkins, best native Cow, silver medal, or $8.

R. Armstrong, best fat Ox over four years, bronze medal, or $5.

C. G. Hopkins, best do. Steer, under do. do., bronze medal or $5.

J. Meek, best imported Stallion, "Oregon," certificate.

J. Meek 2d best do. do., "Glencoe," silver cup, or $10.

S. P. Ford, best native Stallion, "Democrat," cup or $10.

P. J. Gulick, 2d best do. do., "Young Oregon," silver medal or $8.

T. Cummins, best native mare, "Scarlet Feather," silver medal or $8.

T. Cummins, 2d best do. do., "Jilt," bronze medal, or $5.

J. Meek, best one year old Mare, "Fanny," book, or $3.

R. Moffitt, best native Gelding, "Emerald," bronze medal or $5.

P. J. Gulick, best pair horses in harness, cup, or $10.

T. Cummins, best imported Ram, "Boki," cup or $10.

R. Moffitt, best native do., bronze medal, or $5.

E. Sparks, best two Merino Ewes, book, or $3.

R. Moffitt, best three Fleeces, bronze medal, or $5.
J. Meek, best imported Boar, bronze medal, or $5.
J. Meek, best do. Sow, bronze medal, or $5.
J. Meek, best lot of Pigs, bronze medal, or $5.
E. Sparks, best Butter, 3 firkins, cup, or $10.
H. A. Widemann, 2d best do., bronze medal, or $5.
E. Sparks, best Cheese, bronze medal, or $5.
E. M. Plantation, best 100 lbs. Sugar, silver cup, or $15.
Lihue Plantation, 2d best do., cup, or $10.
Brewer Plantation, best Syrup, silver medal, or $8.
P. Cumings, best 75 lbs. Coffee, cup, or $10.
T. E. Taylor, 2d best do. do., silver medal, or $8.
Kekaha, best sample of Wheat, cup or $10.
J. T. Gower, 2d best do., medal, or $8.
A. Archer, best Corn, 20 ears, bronze medal, or $5.
V. Knudsen, best bushel do., bronze medal, or $5.
V. Knudsen, best crop do., silver cup, or $10.
J. T. Gower, best peck of White Beans, bronze medal, or $5.
J. T. Gower, best variety of do., bronze medal, or $5.
J. Makee, best variety of Vegetables, cup or $10.
F. A. Oudinot, 2d best do. do., silver medal, or $8.
F. A. Oudinot, best Sweet Potatoes foreign seed, silver medal, or $8.
F. A. Oudinot, best 10 heads of Kalo, bronze medal, or $5.
J. Makee, best 12 white Turnips, book, or $3.
H. Stangenwald, best 12 Carrots, book, or $3.
J. Makee, best 12 Radishes, book, or $3.
L. Andrews, best 6 Beets, book or $3.
W. Goodale, best 3 Squashes, book, or $3.
W. Goodale, largest Squashes or Pumpkins, book, or $3.
F. A. Oudinot, greatest variety of Potatoes, book, or $3.
F. A. Oudinot, best Grapes, bronze medal, or $5.
S. C. Damon, largest Watermelon, book, or $3.
F. A. Oudinot, best Bananas, book, or $3.
F. A. Oudinot, 2d best do., book, or $2.
Mrs. Hillebrand, best variety of Flowers, cup, or $10.
Mrs. Hillebrand, 2d best do. do., silver medal, or $8.

Miss Anna McKibbin, best Floral Design, silver medal, or $8.
Mrs. Wm. Ladd, best Boquet, vases, or $5.
Mrs. O. H. Wood, 2d best do., boquet holder, or $3.
Mrs. J. H. Wood, best basket of Flowers, boquet holder, or $3.
Mrs. Stangenwald, 2d best do. do., book, or $3.
Mrs. Makee, greatest variety of Roses, book, or $3.
Mrs. Makee, best collection of Verbenas, book, or $2.
Mrs. Makee, best do. of Coxcombs and Pinks, book, or $2.
Mrs. B. Judd, best knit Stockings, book, or $2.
Miss Gilson, best crochet Collar, diploma, or $2.
Miss Montgomery, best wrought Flowers, diploma, or $2.
Mrs. Melchers, best leather Flowers, diploma, or $2.
M. R. Packer & Co., best Soap, bronze medal, or $5.
C. Brenig, best Bread, cup, or $10.
M. J. Armstrong, 2d best do., silver medal, or $8.
C. A. Hall, 3d best do., bronze medal, or $5.
J. H. Wood, best tanned native Goat skins, bronze medal, or $5.
J. H. Wood, best do. do. Cowhide, bronze medal, or $5.
Robinson & Hughes, best Saddle, bronze medal, or $5.
Robinson & Hughes, best Bridle, book, or $3.
H. A. Widemann, best Kukui Oil, silver medal, or $8.
H. G. Crabb, best Cock and 2 Hens, bronze medal, or $5.
M. C. Monsarrat, best pair Muscovy Ducks, book, or $3.
G. C. Melchers, best pair Geese, book, or $3.

THURSDAY, July 31, 1856.

The Society met at the Court House at 10 o'clock.

The Reports of Standing Committees were received, and that upon Bees elicited some discussion, whereupon, it was

Resolved, That the Board of Managers be instructed to attempt to procure Bees, from such parts of the world as may seem to them feasible.

The Reports of Standing Committees were referred to the Board of Managers, to be printed at their discretion. E. O. Hall, Wm. Hillebrand and J. H. Wood were appointed a Committee on printing.

After a discussion of the subject, it was

Resolved, That the Board of Managers be instructed to procure a Room for the use of the Society, the deposit of its Library, and other purposes; Provided the same can be procured for a sum within the means of the Society.

Mr. Wm. Fell, of San Francisco, was elected a corresponding member of the Society.

The business of the Society having been concluded, adjourned to meet again at the call of the Board of Managers.

The following are the Reports of the Standing Committees appointed in 1855, to report to the Society at its meeting in 1856.

REPORT ON SUGAR.

HONOLULU, July 30, 1856.

To the President of the R. H. Agricultural Society:

DEAR SIR,—In the absence of the Chairman of the Committee on Sugar, etc., it has unfortunately fallen to me to make the report.

As I am not aware that any improved methods either of cultivation or manufacture of sugar cane have been discovered within the last year, I shall only make a brief statement of the amount of the sugar crop for the present year, and the prospects for the next crop, so far as I can ascertain. In the crop for 1856, is included all manufactured in November and December of 1855.

On Hawaii there are two sugar plantations, both at Hilo, the one belonging to Acho, and the other to C. P. Samsing & Co. The last crop of the former was 110 tons, and the next crop will be about as much. From the latter the crop was 70 tons, and owing to the difficulty in getting labor at Hilo, Messrs. Samsing & Co., have, I understand, abandoned the business.

On Maui there are three plantations; the two principal ones, the "East Maui" and the "Haliimaile" at Makawao, and the other at Hana. Those at Makawao are in good hands, under excellent management, and have every appearance of being profitable now, and promising for the future.

The present crop of the "East Maui" will, when all in, be about

170 tons, yielding an average of one and one half tons per acre, and the next year's crop will it is thought be about the same. On the "Haliimaile" or "Brewer" plantation, cultivation has been much neglected for some time past, so that there will be no crop next year. The present crop will, I am told, amount to about 80 tons. This place has recently changed hands, and is the property of gentlemen of capital and enterprise, and will undoubtedly be carried on energetically and properly. Of the plantation at Hana I know nothing except that some syrup has been made there during the last year, but how much I do not know.

The proprietors of the two plantations on Kauai, the "Koloa" and the "Lihue," (and especially those of the "Lihue") have had much of hard fortune to contend with, in the way of droughts, etc. At Koloa quite extensive and thorough experiments have been tried in planting cane upon dry, thin-soiled uplands, and have resulted in a failure, the last crop amounting to scarcely 50 tons. The uplands have been abandoned, and the cultivation is now confined to the rich lowlands and the borders of a large marsh recently drained. The young cane is said to be very large and handsome, and affords almost a certainty for a crop of 200 tons in 1857; and the superintendent estimates the crop for 1858 at 450 tons from 310 acres, which, considering the quality of ground, is not perhaps too much to expect.

At Lihue the last crop yielded 94 tons, and the next crop would have been considerably more had not the dry weather set in earlier than usual, but now it is impossible to say what it will be. The proprietors are relying upon irrigation to save them from the effects of drought, and had not the weather been unusually dry during the last winter months, the water would have been upon the fields several weeks ago, in time to have benefited the present crop materially; but, in consequence of the lowness of the streams originally relied upon, the water "lead" has had to be extended to a large and constant stream, which will make the lead in all its windings about nine miles in length. Should this experiment work well, and have the effect anticipated, fair crops will henceforth be almost certain.

As nearly as we can ascertain, the entire crop for 1856 is 574 tons sugar, and about 4300 bbls. molasses, and the crop for 1857 will

probably be about 530 tons sugar, and 3600 bbls. molasses; and from present appearances, the crop for 1858, will be much larger than either.

The Reciprocity Treaty negotiated between the United States and Hawaiian governments, had not, at latest dates, been ratified, but considering the assurances that have been made, we cannot doubt that it will be, before the adjournment of the present Congress. The operation of that Treaty would no doubt benefit agriculturists generally, and give an impulse to the sugar planting that is greatly needed in order to keep up the hopes of those already in the business, and to induce the establishment of new plantations.

Native labor is more easily procured than it was in the years 1849 to 1853, when the produce trade with California was brisk and profitable, but still there is a scarcity, and the quality is poor.

Owing to the quarrelsome dispositions and mischievous habits of the coolies, they are not as much employed on the sugar plantations as they were two or three years ago.

Respectfully submitted, by CHAS. R. BISHOP.

DISCOURSE ON COFFEE.

Read before the R. H. Agricultural Society:

Upon the important subject of Coffee planting in the Hawaiian Islands, all that can be said will be found in the six published numbers of the Society. The essay of Mr. Godfrey Rhodes, page 54 of No. 2, for 1851—his further remarks at page 67 of No. 3, for 1852—the essays of Mr. William Duncan and of Dr. Newcomb, on Worms and Insects, page 71 and 94, respectively, of the same Number—the remarks of Mr. Rhodes on Worms and Caterpillars, page 61 of No. 4 for 1853—the replies to 21 questions by Mr. Wyllie of Dr. Rooke, of No. 1, vol. 2d, for 1854, page 30—of Mr. Rhodes, page 32—of Mr. Pitman, page 37—of Mr. P. Cumings, page 38, and of Mr. S. Reynolds, page 41 of the same Number, if carefully read, will afford nearly all the information that the planter can desire.

In view of information so abundant and varied, the planter can be

at no loss to form good practical rules for the management of his estate. To reduce them into successful practice will depend upon his own diligence, industry and perseverance, his facilities of obtaining a proper supply of money and of labor, and his judgment in applying these advantages to the most useful purposes.

That Coffee planting, with very few exceptions, has hitherto been unprofitable is undeniable; but so was cotton planting in the United States, for upwards of thirty years; by hard labor and perseverance, the Americans overcame difficulties that appeared to be insuperable; and they have now made cotton the greatest staple of their country. By similar means Coffee may be made, not the greatest staple of the Hawaiian Islands, but one of its greatest.

The superior flavor of Hawaiian coffee is now an ascertained fact; instances of individual trees producing 12, 20, and even 30 pounds, are recorded in the previous reports of the Society. By the concurrent testimony of several practical men, two pounds of coffee may be calculated upon as the average of each tree, on an estate. No other proofs are wanting to prove that our soil is well adapted to the growth of the coffee tree.

But the important question remains—can we produce coffee at such a price per pound, as to afford us a security that we will always have a market for it? To solve this question a table is appended, shewing what duties are levied on coffee, by the tariffs of those countries with which we have, or are likely to have mercantile relations, and the price of coffee per pound, in each of such countries, taken from the latest prices current that it has been possible to procure. That table seems to warrant the inference that so long as coffee can be placed on board, here, at say seven cents per pound, we will seldom or ever want a foreign market, either in the United States or Europe, to which it can be exported at some profit, on that price. Whenever that profit may exceed the gain on bills of exchange (and of late exchange has been unfavorable to the buyer) foreign merchants will prefer coffee as a return for their goods imported, to bills of exchange.

By reverting to the communications on coffee, which are referred to above, it will be found that while Dr. Rooke estimates 4 cents per

pound as the average cost of production, Mr. Rhodes values it at 6½ cents. It would seem to be fair, between the two authorities, to take 5¼ cents per pound as the mean. Now, if we can raise coffee at 5¼ cents per pound, and sell it at 7 cents, we would have a profit of 1¾ cents per pound, and so in proportion for every additional cent that we may obtain in price. So long as coffee continues at the prices that have for many months ruled in San Francisco, it cannot be doubted, that coffee plantations, not burdened with an excessive amount of sunk capital, will leave a large profit.

The fact has been ascertained that of late years, the ratio of the increase in the consumption of coffee, has exceeded the ratio of the increase of its production. Just in proportion as people diminish their use of intoxicating stimulants, will the consumption of non-intoxicating stimulants increase; of these coffee is by far the best, and as the spirit of the age tends every where against intoxication and its concomitant vices, it is but reasonable to believe that the demand for coffee will increase from year to year. The probability is that the price will gradually rise in the chief markets of the world; and that it will more frequently be above 10 cents per pound than under that price.

If coffee houses, supplied with the newspapers of the week, and other interesting reading matter, on an humble scale, could be introduced generally among the natives, it would wean them from their present fondness for intoxicating beers and other inebriating compounds—elevate their character in a moral point of view, and create a home market for coffee perhaps to the extent of 100,000 pounds annually. The establishment of coffee-houses in England, had a perceptible effect in diminishing the frequency of inebriety; and their multiplicity in Turkey, perhaps even more than religious scruple, enables the Mussulman to obey the injunction of the Prophet, which inculcates abstinence from beverages having an intoxicating effect.

The want of capital to foment the extension of coffee cultivation continues to be as great an obstruction as ever; but increased production, with greater foreign and domestic demand, will command capital; and as the Honorable David L. Gregg has truly observed in his admirable address to the Society in 1854, *capital will command efficient labor.*

There is reason to believe that the want of labor is less severely felt now than it was several years ago; that the wages of natives and of coolies including their food, does not exceed 33 cents per day; and that it is cheaper than slave labor in the United States, if Mr. Pease was right in stating it at the average of 37½ cents day, as he did in his essay of 1850,—see page 63 of Report No. 1, volume 1. If Mr. Pease did not include, in his calculation, the interest on the value of the slave, the difference will be still greater in favor of such labor as we can procure in these islands.

From all that has been said, the inference is warranted that with good and economical management the prospects of coffee planters in this Kingdom, are encouraging. R. C. WYLLIE.

Foreign Office, July 22d, 1856.

TABLE.

Shewing the duties on Coffee per pound, as fixed in the Tariffs of different countries up to 1855, and the prices, in those countries, per pound, both duties and prices reduced to cents.

By Tariff of	Duty.	Current Prices.	General Remarks.
United States,	Free.	10¾ to 11c pr lb.	Such in New York June 5.
	"	13 to 13½ "	In San Francisco, July 1. Consumption great in US.
Belgium,	about 1c pr lb.	Believed to be abt the same as Hamburg.	Consumes largely: Coffee from Dutch E. I. pays less duty than other foreign.
British,	" 6c pr lb.	8½ to 14½ cts.	Consumption increasing.
New South Wales,	" 1½c "	13 to 16	Do. do.
Victoria,	" 2c "	About the same.	Do. do.
Van Dieman's Land,	" 3c "	" "	Do. do.
South Australia,	" 1¼ "	" "	Do. do.
New Zealand,	less than 1c pr lb.	" "	Do. do.
Denmark,	about 1½c ,,	Not known.	
France.	" 9c ,,	" "	When imported in foreign vessels.
Hamburg,	½ pr ct, *ad valorem*	6 2-3 to 13c.	Vast quantities of Coffee pass through Hamburg & Bremen on the invoice value with the addition of fr't and insurance.
Bremen,	⅔ pr ct, "	About the same as Hamburg.	
Norway,	about 2½c	Not known.	
Sweden,	" 2¼c	" "	
Russia,	" 8¼c	" "	
Zollverein,	" 3 c	" "	

The Zollverein comprises — Prussia, Saxony, Bavaria, Wurtem-

burg, Hesse Cassel, Hesse Darmstadt, Hesse Homburg, Baden, Nassau, Oldenburg, Brunswick, Saxe-Wiemar, Saxe-Coburg, Saxe-Meinengen, Schwarzburg-Rudolpstadt, Schwarzburg-Sonderschausen, Anhalt, Lippe-Detmold and Schaumburg-Lippe, Waldeck, Reus, Frankfort on the Maine, and Luxemburg.

In this table, no note is taken of the Republics of South America, because though adjacent to us, all of them on the Pacific coast, except Chile, produce Coffee, and we cannot calculate upon them as markets for our consumption. R. C. WYLLIE.

Foreign Office, 22d July, 1856.

REPORT ON INTER-ISLAND NAVIGATION.

Vessels propelled by steam or other equivalent locomotive power, are the only ones fit to carry on the trade between our Islands so as to develope all their resources. Cattle cannot be transported with economy and safety except by steam vessels, combining the advantages of spacious deck, small draft of water, and quick transit. Fruits and other useful vegetables, from remote islands and places, cannot reach Honolulu, the chief market for consumption, in a state fit for use, unless conveyed in steam vessels; nor can any other vessel safely anchor and embark produce at those many places where anchorage exists, and where landing is practicable, along the costs of all the Islands. Mr. Metcalf has stated that there are scarcely ten continuous miles of coast any where along the shores of the Islands, where such facilities of anchoring and landing are not to be found.

If we possessed steam vessels passing round the Islands and calling at the chief of those places all along their coast, it is impossible to say how much traffic might be created, and how much the industry and wealth of the Islands would be promoted.

The report of Mr. Prendergast is added, because, as that of a practical man, speaking from actual experience, although under most adverse circumstances, it is of great value. If the results from steam navigation with such steamers as we have had have been such

as he represents them, (and we have no reason to doubt his statements,) what will the results be of steam navigation when we have suitable vessels ?

At the first introduction of steam vessels and railroads, they have every where been opposed by men wedded to the existing state of things, and sceptical as to the results of all improvements. Every where there are men—good and conscientious men, too—who are of that timid, doubting temperament. We have them here; they oppose the introduction of steam navigation upon the ground that all the traffic of the Islands will not pay their expenses. Precisely such were the arguments used against the first proposals to introduce steam vessels into the British Australian Colonies; yet by their introduction, not many years ago, traffic so much increased and so rapidly, that in 1855, the following steamers were employed between the port of Sydney and others in that country.

LIST OF STEAMERS Trading to and from the Port of Sydney, with their capabilites, and the trade in which they are engaged.

NAMES.	TONS.	Horse Pw'r.	Trading to.
Yarra Yarra,	526	200	Wide Bay.
Waratah,	380	140	Melbourne.
City of Sydney,	735	180	do.
Wonga Wonga,	735	180	do.
Hellespont,	330	80	Laid up.
London,	686	380	do.
Governor General,	686	450	do.
Telegraph,	468	150	Melbourne.
Illalong,	150	60	Hunter River.
Hunter,	250	120	do.
Collaroy,	328	150	do.
Tamar,	200	60	do.
Ben Bolt,	234	110	Laid up.
Paterson,	310	120	Hunter River.
Williams,	300	120	do.
Eagle,	224	80	Refitting.
City of Melbourne,	180	33	New Castle.
William Miskin,	124	43	Laid up.
Boomerang,	324	66	Moreton Bay.
William IV.,	84	20	Port Macquarie.
Grafton,	315	100	Clarence River.
Illawarra,	233	80	Wollongong.
William Denny,	595	200	Auckland.
Tasmania,	452	240	Hobart Town.
Nora Creina,	140	85	Shoal Haven.
Black Swan,	40	45	Brisbane Water.
Pelican,	70	35	Paramatta.
Shamrock,	394	100	Moreton Bay.
Rose,	276	100	Repairing.
Thistle,	276	100	do.
Emu,	72	30	Paramatta.
Pluto,	104	40	Manning River.
Kiama,	104	60	Kiama.
Gipsey,	93	36	Manning River.
Meteor,	128	75	

The following steamers ply to the various settlements in the harbor of Port Jackson:

Names.	Tons.	Horse power.	
Planet,	90	40	
Brothers,	23	12	
Ferry Queen,	8	3	
Waterman,	17	8	
Gipsey Queen,	6	6	
Pet,	6	4	
Victoria,	107	60	
Washington,	102	120	Towing vessels.
Huntress,	110	60	
Herald,			
Star,	35	23	

The experiment in British Australia has been so very successful that while in 1853 there were registered 24 steamers, in 1854 there were registered 43. Nor has this increase been found sensibly to diminish the number of sailing vessels engaged in the coasting trade. In 1853, 948 sailing vessels were engaged in that trade, and in 1854, 947 vessels were registered as engaged in this same trade. The tonnage of sailing vessels and steamers taken together, in 1853 was 76,397, and in 1854 it was 131,234.

It has been so with the coasting trade of Great Britain and Ireland, notwithstanding the confident predictions made in Parliament that the introduction of steamers would entirely supersede the use of sailing vessels in that trade.

In 1853 there entered and cleared coastwise 98,717 sailing vessels, tonnage 7,900,851, and 11,708 steamers, tonnage 2,773,444, in England. In Scotland, 14,484 sailing vessels, tonnage 886,233, and steamers 4,617, tonnage 1,018,037. And in Ireland 18,101 sailing vessels, tonnage 1,417,465, and steamers 4,860, tonnage 1,484,827. In 1854, there entered and cleared coastwise in England 95,545 British sailing vessels, tonnage 7,554,934, and 297 foreign sailing vessels, tonnage 43,778—also 12,782 steamers, tonnage 3,106,396. In Scotland, 13,739 British sailing vessels, tonnage 856,305, 52 foreign sailing vessels, tonnage 3,996, and 4,879 steamers, tonnage 1,075,388. And in Ireland, 17,414 British sailing vessels, tonnage 1,305,001, and 1 foreign sailing vessel, tonnage 108—also 4,751 steamers, with 1,428,435 tons burden. The total number of men employed in 1854, exclusive of masters, was 162,416.

It will of course be understood that the above numbers do not represent so many distinct vessels, but the number of vessels entered and cleared, and that the same vessel enters and clears often, in the coasting trade, during the year.

It is not to be doubted that in this kingdom, when proper steam vessels are properly established, their existence will be found quite compatible with the interests of the owners of sailing vessels engaged in the coasting trade. The effect at first sight would appear to be otherwise, but experience every where has proved that steam vessels create traffic, both for themselves and for sailing vessels too.

The able discourse, and the valuable notes added to it, of the Hon. David L. Gregg, read to the Society in 1854, show clearly and eloquently that what we are *now* is nothing compared with what we may become and ought to be. It follows as a necessary consequence, that in all our public works and improvements we ought not to confine our views to our present wants, but to look ahead to our future requirements: of these, one of the most palpable is inter-island steam navigation.

If this be granted, the next question is, what is the best description of steam vessels for us to introduce?

With due deference to the contrary opinion of others, I would prefer propellers and built of iron. They are the most handy, the cheapest, the most durable, and built in distinct compartments, they are the safest.

In 1854 there were built and registered in the United Kingdom of Great Britain 592 timber sailing vessels, tonnage 115,807, and 36 iron sailing vessels, tonnage 16,880, and 22 timber steamers, tonnage 2,090; and no less than 152 iron steamers, with 62,165 tons burden. This fact alone is the best answer that could be desired to all the objections that have been started to the use of iron in the building of ships.

Iron steamers have for more than 15 years been in use between the Clyde and the Mersey; they and iron sailing vessels have made long voyages abroad, and without any accident whatever traceable to variations of the compass.

Among the objections that have been urged against iron vessels, are those variations caused by the mass of iron, the rapid oxidation of the nails which fasten the plates, and the difficulty of keeping the bottom clean. All these have been so overcome by successive inventions and improvements, that many of the ship-owners in Great Britain believe that iron will soon supersede wood in ship building almost entirely.

Mr. John Getty, shipbuilder of Liverpool, has invented a novel mode of using iron in constructing the frames or ribs, or other main parts of ships—chiefly those which are to be planked with wood and require the employment of copper bolts for holding the planks in

place—the main object being to avoid all contact between the iron and the copper bolts, and consequently to prevent a destructive galvanic action being set up between the two metals. To give strength to ships, Mr. Getty plates the opposite sides of the timbers with iron, and secures the plates together by bolts which pass through the iron and the wood, and then he forms compound ribs or frames of considerable stiffness, which will permit of the copper bolts for securing the planks being inserted therein without coming in contact with the iron. For the purpose of facilitating the building of vessels upon this compound principle, he proposes that the breadth of the iron plates shall be, in general, less say by about 2 inches than the depth of the timber to which they are applied, to admit of the ribs being chamfered off to any required angle to suit the curve of the vessel. This mode of strengthening timbers Mr. Getty proposes to employ in constructing the keels and sternposts, frames or ribs, keelsons, sister keelsons, and bilge keelsons, stringers and clamps of ships.

There still remains another important question: Who are to introduce such steamers as we want—the Government or private individuals?

There can be no difference of opinion that it ought to be the latter if they would procure the right kind of steamers and undertake the risk. We have made an experiment of this sort, and have *failed*, because the steamers introduced were not proper sea-going vessels nor suitable to our wants. To obtain them, it appears indispensable that the Government should undertake the expense and the risk of their introduction in the first instance. After proof of their efficiency and of a good profit arising from their operation, the Government would have no difficulty in ceding them, on advantageous terms, to some private association.

In fine, all the republics of South America have steamers running along their coasts; California and Oregon have steamers; the Russian settlements on both Pacific and Asiatic coasts have steamers; China and the Philippine Islands have steamers; the British Australian Colonies have steamers, the French in Tahiti and New Caledonia have steamers; and it will be much to be deprecated if we Hawaiians, with all the advantages of our singular position, and of all

the varied resources of our Islands, remain without steamers, or vessels propelled by other equivalent motive power.

R. C. WYLLIE.

FOREIGN OFFICE, 28th July, 1856.

HONOLULU, 28th July, 1856.

To the Hon. R. C. WYLLIE, *Chairman of the Committee on Roads and Inter-Island Navigation*:

SIR:—I have received your communication of the 14th present, and although I regret you did not call on one more capable of doing justice to the subject of inter-island navigation, I will endeavor, in a brief report, to set forth my views, supporting them by what statistics I have in my possession.

The *Akamai* arrived here in the fall season of 1853. This steamer of 125 tons register was the pioneer boat sent to fulfil the terms of a charter, granted to G. W. Ryckman and others, for the exclusive privilege of inter-island steam navigation for a term of years. There was a clause in the charter that another new, good, and substantial steamer, of not less than 250 tons, should be placed on the route. It is to be regretted such a boat as the *Akamai* should have been the pioneer, as she was in no way calculated for the place she was made to fill, having neither capacity, strength or power to contend with the rough and heavy seas which are constantly met with in the inter-island channels. It was not deemed necessary to send a stronger boat, as it had been represented to the parties interested who sent her, that the passage from one island to the other *was as smooth as a mill pond.* The failure of this boat prejudiced the minds of the native population against steam communication, and gave rise to the opinion that the country was too young and not yet ripe enough for steam; but I shall endeavor to show by the following statistics that the same can be made to pay, and do much to develope agricultural resources, and give the natives an impetus to raise more produce.

With a boat adapted for the trade, cards would be circulated stat-

ing the time of the departure from the different ports for months ahead, and by this means they could calculate on a conveyance of their products to this market from any one of the ports in 12 hours after shipment. How is it now? No time is fixed, the native comes down with his produce some 12 or 15 miles, he finds there is no schooner in port, or she has just left; his merchandise is perishable, he offers it for sale, and sells it for what he can get. He returns to his family in perfect disgust, and says, "what is the use in my trying to raise anything? I cannot get it to market."

The Island of Kauai labors under greater disadvantages than any of the other islands, as a schooner seldom makes the passage in less than three or four days, for she has at all times to beat up against a head wind, where a steamer would make the time in 12 hours. I believe there are instances where schooners have been out eight and ten days.

In October, 1854, I became connected with the Hawaiian Steam Navigation Company, and the company in that month sent over from San Francisco two steamers, the *Sea Bird* and the *West Point*. The *Sea Bird* was a good and substantial boat, and could have been made adapted to the trade. Her boiler was not calculated to burn wood, and the price of coal was then $30 per ton, a prohibitory price to the profitable running of a steamer, and it was resolved by the owners to withdraw her and maintain the charter with the *West Point*. This boat was unfortunately an old one and much too weak. Her boiler was in a very bad condition, and no calculation could be made on her time. She was finally laid up on the 17th of May, 1855, and with the advice of the owners I had her strengthened, and she received her new boilers in November of that year, making her first trip on the 20th of that month, and running regularly alternate weeks to Maui and Kauai, until she was lost on the morning of the 5th of January, of this year, at Koloa.

The following statement of receipts and expenditures is the best argument which I can bring forward to show clearly that a steamer will pay, as there is a balance of $2,259 94 to her credit.

Receipts and Expenditures of steamer "West Point" for 46 days, from 20th Nov., 1855, to the 5th of Jan., 1856.

RECEIPTS.

Trip No. 1, to Kauai,			$554 74	
"	2,	Maui,	361 92	
"	3,	Kauai,	777 78	
"	4,	Maui,	265 14	
"	5,	Kauai,	518.66	
"	6,	Maui,	431 70	
"	7,	Kauai, (lost,)	1,350 00	
				$4,259 94

EXPENDITURES.

Pay roll of captain, officers and crew for 46 days,	$889 00	
Fuel for 7 trips, wood $4 per cord,	800 00	
Stores, &c.,	311 00	
		$2,000 00
Balance to Credit of boat,		$2,259 94

I know it is supposed by many that a steam communication between the islands would ruin the present coasting trade, but strange to say, it has not that effect wherever it has been tried. In Great Britain and the United States where steam communication has been introduced, it invariably has increased general trade and traffic, and the coasting trade with sailing vessels has also been benefited. This is a matter of statistics.

For a boat suitable for inter-island navigation, I should recommend a side-wheel boat, of about the following dimensions: length 160 feet, beam 28 do., depth of hold 10 do., tonnage about 400 tons; size of engine, 34 inch, 9 feet stroke; diameter of wheel, 24 feet, 5½ feet face; walking-beam engine, with a boiler adapted to burn wood or coal; draft, 8 feet.

I know there are many residents who think a propeller the most desirable, but the short limits of a report will not allow a discussion of the relative merits.

From the thorough manner in which the propeller now in course of

erection is being built, I am led to believe that a steamer of the largest dimensions necessary for inter-island trade could be built here, and I know the machinery requisite could be obtained at a very low rate in California. Hawaii produces just the timber requisite, which could be easily obtained, and the expenditure of the money necessary for the purpose could be disbursed among our own people, and a portion find its way back to the treasury again.

Submitting these brief and by no means thorough remarks,

I have the honor to be, sir,

Your most ob't serv't,

HENRY PRENDERGAST.

DISCOURSE ON ROADS.

Read to the R. H. Agricultural Society, July 31.

In many parts of the Islands, the agriculturist will labor in vain, unless he have good roads to convey his produce to market. But so it has been with all countries in the world, even long after they had attained a degree of civilization and wealth, higher than any we can as yet pretend to. In no country where the population is sparse can good roads be expected, because there are neither laborers to make them, nor money to make them and keep them in repair. With less than 80,000 inhabitants spread over 6100 square miles of territory, all that we can expect is to have good roads in the immediate vicinity of towns and seaports, and even to make them, our revenue does not as yet suffice.

In an essay by Mr. Metcalf, which will be found in Report No. 4, for 1853, he states there are scarcely ten consecutive miles of seacoast, where there is not anchorage and where a landing cannot be effected, almost every day. If this be the case, and no doubt of the fact is implied, it must be evident that if a good cart road close to the sea shore could be carried around all the principal islands, it would be of great public advantage. Wherever from the centre of the islands, valleys and rivulets radiate towards the coast, there must be a facility in making a practicable road down towards the coast; and

the inhabitants of each valley would find it their interest to make such a road, if they were sure that in carrying it to the sea-side it would strike a circular road, by which their produce could be easily and cheaply conveyed to a place of shipment.

The natives have yet to learn how much they are able to achieve by *combining their labor.* If the inhabitants of each valley throughout the islands, were to assist each other, for their common good, in a very short period they might have local roads, grounds fenced in, water courses dug and embanked, new and roomy houses built and thatched, and even churches and school-houses erected. Spending, as they unfortunately do, the greatest portion of every year in slothful inaction, the *time* required for such co-operation would really cost them nothing; they would sacrifice no earnings of daily labor to which they do not apply themselves; and each family would be amply repaid for its labor for others, by its own participation in the common benefit. For example, if a family had to assist its neighbors in fencing their lands and building their houses, those neighbors would assist that family in turn, to fence the lands belonging to and build a house for such family. Roads, water courses, churches and schools are all for the common benefit of those who live so near as to be able to use them, and no man can labor at such works without benefiting himself. The Hawaiian people will never prosper, until they depend more upon themselves and less upon the government than they have been accustomed to do. They seem to think that the government should do everything for them, while they do nothing for themselves. They have yet to learn that the source of all wealth is labor; that without labor neither taxes nor duties could be paid, the government would derive no revenue, and having no revenue, it could not even exist, and far less make roads, improve harbors, or undertake any other work for the good of the people. All that the best government can do, is to encourage labor by removing every obstruction to industry, to maintain peace and order, to protect life and property, and to administer justice, cheaply, promptly, and impartially, to every man.

It is no reproach to the Hawaiian people to say that they are bad road makers; neither road-making nor shoe-making come by inspiration. As practical arts they must be taught and learned *practically.*

Yet, hitherto in all our attempts at street and road-making, we have trusted chiefly to native labor and native direction. The first is a necessity, but the second is not. The power given to the Minister of the Interior to appoint Road Supervisors throughout the Kingdom, by the 4th Section of the Act relating to the Road Tax, approved by the King on the 30th of June last, and published in the Polynesian No. 11, of the 19th instant, will enable that Minister to correct a great evil by appointing only road supervisors who know something of the way in which roads should be constructed.

Now in what way ought roads to be constructed? It may be answered—by observing in what manner our main road leading up Nuuanu valley has been made and repaired, and by adopting as a principle of road-making the very reverse of what has been done on the Nuuanu road.

The plan that seems to have been pursued here appears to have been, to mark out the line of road, dig a trench on each side and throw the loose earth on the road towards the centre; and the plan pursued to repair it, is to throw the earth on the sides, washed and trampled down from the centre, back again upon or towards the centre (capping the climax of absurdity by a thin topping of black sand) —thus preparing the way for the same process to be repeated twice or thrice a year to the end of time.

Let us hear what Mr. Webster, who is a civil engineer, says of road making. On the 22d of February last, he wrote as follows:

"I may say shortly that a good road should be laid off as direct as possible between the points desired to be connected; that it should avoid hills where they can be avoided, also the bottom of hollows, where it is liable to become a mere water course; that it should have at least a foot of gravel at the top, laid on a curve to throw off the water; and last that it should be thoroughly drained by means of side ditches to be kept always clear and in good order, care being taken to give vent to the water from the ditches as often as practicable. The surface of the road when once formed ought to receive constant attention, and if from subsidence the water is found to lodge on any part, it should immediately be let off and fresh gravel applied to fill the hollow."

The Nuuanu road has been constructed and is yearly repaired upon principles the very reverse of these plain, common sense rules recommended by Mr. Webster; and, without any excuse whatever, for the adjacent stone quarry of Mr. Booth, rendered it easy to procure any quantity of gravel.

It is but too probable that the 150 miles of carriage road and 450 miles of bridle road reported as made, by Mr. Metcalf (see page 148 of Report No. 4, for 1853) were roads constructed on the same principles as our famous high-way of Nuuanu. Any other inference is scarcely compatible with what Mr. Webster states at page 151 of the same No., which was that the then existing roads on Oahu, were "as bad as nature assisted by art could make them"—and as for bridges, that any one crossing them on horseback, had reason to be thankful that he had got to the other side with whole bones and without a ducking.

From the language used by Mr. Webster it is quite clear that in his view, art had only rendered our roads, naturally bad, still worse; if so, whatever money may have been expended on the 600 miles of road alluded to by Mr. Metcalf, must have been thrown away; and it will be wisdom now not to expend a single dollar on roads, unless under the new law above referred to, the Minister of the Interior have some security that the road will be constructed according to the principles recommended by Mr. Webster.

These principles agree with those adopted by the Romans upwards of 20 centuries ago.

The Babylonians, the Persians, the Egyptians and the Greeks, although the most civilized nations of antiquity, were wanting in a system of public roads. Not so the Carthaginians, the Etruscans, and the Romans, but especially the latter, during the earlier period of the empire. From the various gates of ancient Rome, diverged about thirty principal roads, towards the furthest limits of the empire, each with many collateral roads branching out in various directions. Of several of the principal of those roads, remains exist to this day, after a lapse of more than 2000 years.

We may profitably enquire what was the Roman system of road making that was so extraordinarily durable. Statius thus describes it :

"The road was lined out as straight as possible, and the width marked by a trench at each side. The next step was to remove the whole of the soil betwixt the trenches to the full depth of the road. If the ground at the bottom was found to be firm and solid, the surface of it was levelled and the work proceeded; but if not, then piles were driven to secure it. Thus a place was formed to receive the mass of materials which formed the body of the road; this was termed the *gremium*, and the whole purpose of it was to prepare a suitable and durable bed for the upper surface—the *pavimentum*, or roadway. The *gremium* consisted of three distinct parts, the lowest being the *statumen*, the middle the *rudus*, and the uppermost the *nucleus*. The *statumen* varied in depth according to circumstances. It was laid upon the surface of the bed of the road, whether that surface was the natural soil or the tops of the piles, and was composed of rough, hard stones, of a size to fill the hand. It was laid on, ordinarily to the depth of from 12 to 18 inches. On such depth of *statumen*, was placed the *rudus*, which was a mass of small broken stones cemented with lime mortar, of about nine inches thick, thoroughly beat together and smoothed. For that purpose, parties of ten men, with heavy wooden mallets were employed. The lime mortar was to be in proportion of one third, if the materials were new, and of two-fifths, if they were old.

"Over the *rudus*, was laid the *nucleus*, which was a layer, six inches deep, of broken bricks, tiles and pottery mixed up with a third part of lime mortar.

"These three layers only formed the bed for the roadway.

"The roadway itself, in the best roads, was formed of blocks of basalt, carefully laid by rule and level. These blocks were of various sizes, but usually from 9 to 12 inches deep—the sides cut into polygons, so closely fitted together, as to give the road the appearance of being of one stone.

"On each side of the road when complete, was a foot-path raised above its level, sometimes paved like the road, and at other times, only covered with gravel, but always bordered with stones carefully placed in the margin.

"In order that the water might flow off from the road, its centre was raised higher than the sides.

"The two great principles of the Roman road making were a solid foundation and a perfect dryness; and both of them were obtained by the rules prescribed in the most effectual manner."

Such an expensive system of road making is wholly inapplicable to the Hawaiian Islands, where the want of money is the great obstacle to the making of roads and of all other improvements. But it is not so with the *principles* followed by the Romans. We can apply our labor, so as to make a convexity in our roads, and to preserve that convexity, and not so as to tend to that concavity of which the Nuuanu road presents a near example, rendering it even, after rains, a mere channel for water and mud. If after the road has been hardened by the sun and by traffic, the ruts and hollows were filled up by gravel and the earth on the sides thrown off the road, in place of upon the road, and the ditches on each side always kept clear and deep enough, the heaviest rain would not convert it into a puddle; the road would be efficient for carriage and foot passengers in all weathers, and it would be kept in repair at less annual expense than at present.

The writer does not pretend to be more than a theorist in road making, yet in April, 1848, he made a road of 131 fathoms, at a cost of $327 50 cts., upon the same principles as those recommended by Mr. Webster, and practiced by the Romans, which has stood all weathers ever since, without ever losing its convexity, without ever lodging water, or requiring one dollar of expenditure for repairs. The only variation from Mr. Webster's plan, was in the substitution of black sand, to the depth of about 18 inches, in place of gravel.

The opinion of Mr. R. A. S. Wood, Superintendent of Public Works, does not differ materially from that of Mr. Webster. On the 6th of March last, he gave the following as his views:

"The condition of most of the roads does not indicate any material improvement for the past four or five years. And while it could not be expected that those to whom is intrusted the construction and repairs of the highways of internal commerce should be practical engineers, it is deplorable that what little they do attempt should be generally in the wrong direction. Situated as we are in a climate free from frost and so favorable to good roads, I doubt very much if

thirty mi'es of road can be found in the whole kingdom, where a single pair of oxen could haul 40 bushels of wheat, or any equal weight of any kind that the farmer wishes to get to market. The grand difficulty appears to be the want of a proper knowledge of draining, and the most suitable material to fill up marshy and other wet places. We have abundance of materials for such purposes, but our *Lunas* prefer taking another method, and treat the roads that require to be firm and hard in the same manner as they would their farms, viz: by applying the plough, and breaking up a mass of soft matter that is washed away by the first rains, or else remains a dusty nuisance through the dry season. I think a moderate appropriation could not be in any way better applied to the public good, than to employ a competent practical person, one acquainted with the wants and resources of the people, to make a tour of the entire group, and impart such instruction as will secure in future a more profitable expenditure of the road tax, for it is well founded from long experience that under the present system of road making it is a waste of money and a blot upon the government."

It is to be hoped that the Minister of the Interior, under the powers conferred upon him by the late Act already referred to, will remove that "blot" from the government, and relieve the King's scanty treasury from paying such artists in road making as heretofore have only by their art, "assisted nature" in rendering our roads *as bad as bad can be*, without leaving us thirty continuous miles along which 40 bushels of wheat can be hauled.

It is evident that our *Lunas* have been hitherto playing the game of *Sisyphus*, with this only difference, that while he strives to roll up a stone ever coming down again, our *Lunas* strive to roll up earth, which the rain ever washes down again in the form of mud.

There is not one dollar in the Treasury to spare for such absurd amusement.

R. C. WYLLIE.

FOREIGN OFFICE, July 23d, 1856.

REROKT ON CATTLE AND SHEEP.

Having been called upon to write a report on cattle and one on

sheep for the year ending July, 1856, as chairman of the committtees on both these subjects, I have taken the liberty of making one report include both. It is hardly fair to call on any one individual to report on the same subject year after year, besides that such a course fails to elicit the different views and experiences of different individuals, and as I have already written at least three reports on cattle and I think two on sheep, I can hardly be expected to have anything fresh to say on the subject.

As many persons suppose that the cu'tivation of the soil is in all cases the most important pursuit in which those who live in the country and whose business it is to produce food for the human race can be engaged, and consider grazing of very secondary importance, I must be allowed to make a quotation from the works of Dr. Pickering, of the U. S. Exploring Expedition, in support of my opinion that the relative value to the community of the two branches of farming depend entirely on circumstances. In his work on the Races of Men, he gives a map of the world exhibiting his views of the geographical distribution of the different races. From his explanation of his map I quote the following:

"The phases of climate, varying especially in the proportions of moisture, partition out the soil and its vegetable growth into three well marked divisions. 1. There are countries which are almost entirely devoid of vegetation. 2. Other extensive regions are more or less covered with herbage or produce scattered bushes and stunted woody plants, but are destitute of proper forests. 3. A third description of territory is in its natural state clothed with continuous woods. This state of things is likewise presented on the map not merely from its connexion with geographical botany, but as a point eminently illustrative of the history and present condition of the human family.

"Art indeed cuts down the forest and encroaches slightly on the barren territory; but yet the above three natural divisions will very nearly correspond with desert, pastoral and agricultural countries. It is a mistake to suppose with many that pastoral or nomadic life is a stage in the progressive improvement of society. The condition is inscribed on the face of nature, and widely extended regions minister to the wants of man where nevertheless cultivation is impossible."

So far Dr. Pickering. Now it seems to me that the proportion which the arable land in the Sandwich Islands bears to that which is well adapted for grazing purposes is very small indeed. The Islands undoubtedly in former days supported a population many times more numerous than its present one, almost exclusively on vegetable diet. But what was it? The cereals were unknown here, and the kalo and sweet potato are both so perishable when ripe that they must be used almost immediately after being taken out of the earth or ponds where they were grown. Now a much smaller population cannot depend on the produce of any one country to minister to its daily wants, and therefore we must produce something here which we can exchange for the productions of other countries.

I think I may say that there are hundreds of acres here fitted for the production of wool, beef, hides, and tallow, for the one acre fitted for the production of sugar, coffee, or tobacco. And while I admit the excellent quality of these articles produced here, I claim the same meed of praise for the articles produced by the grazier. Wool must become an important article of export from these Islands, because exports we must have, and you can judge from the wool grown and exhibited at your Fair, whether such an article can fail to take its proper place in a market where the demand is increasing every year. As for beef, it is only in the lazy climate of tropical islands in the Pacific, (I don't allude to any one island in particular) that casks of salt beef which had come round the Horn and crossed the Line twice, could be offered for sale year after year in the harbor of a group which contains many thousands of fat cattle ranging over accessible pastures. The graziers are however, gradually though slowly awakening from their long lethargy, and in addition to the Angushire, Hereford, Durham, and Devon cattle imported here previously, there are now on their way here two pure short horns from the States.

In the sheep line, a pure Merino ram and ewe of the best description have been imported from Australia by John Montgomery, Esq., since our last meeting, and there are exhibited at the present Fair a South Down ram and ewe of those imported by Thomas Cummins, Esq. These in addition to the Merinos imported previously at different times from Van Dieman's Land, Australia, and the States,

will give with a little care and judicious crossing, as good mutton and wool as can be grown anywhere. The same may be said of the cattle. With care and attention, judicious breeding and our good pastures, we need not fear competition from any other country.

That beef can be perfectly cured here is certain, because it has been done, and what has been done may be done again, but every trace of the old fashioned, filthy, slovenly, Spanish system must be abolished before any one can hope to succeed in packing beef. Bull-fights are gone out of fashion every where, and it must be remembered that the animal which has been worried and excited immediately before its decease, has its certain revenge by refusing in consequence to keep sweet. In order that the animal may die calmly, it must live peaceably, and must have been brought up in a state of civilization.

I have but one word more to say with regard to increase. Every good gardener knows that the quantity and quality of his crop of fruit depends quite as much on a free use of the pruning knife, as on the cultivation and fertility of his soil. And so it is with cattle on the extensive pastures where we are compelled to run them here, without the means of separating the different ages and sexes. A very little reflection will show that if a heifer has a calf at eighteen months old, and is allowed to rear it, that she and her calf will not be worth so much together in twelve months time as a large well-grown two and a half years old heifer, either fat or about to calve again. In the same way it is unprofitable to allow the old cows to rear calves until their death from exhaustion. There is an old saying that the half is sometimes more than the whole, which I think applies to this case.

R. MOFFITT.

ON SOILS.

By Hon. L. Andrews.

By *soil*, in agriculture, is meant that compound substance which constitutes the upper surface of the earth. It is that which furnishes nutriment and support to trees and plants. Soil is a compound of particles of very different, and often of opposite natures.

Johnson, in his "Chemistry of Common Life," describes the formation of soil as follows: "The soil is formed for the most part from the rocks of which the crust of the earth is composed. By the action of air and water these rocks crumble, and their surface becomes covered with loose materials. The seeds of plants are sprinkled over them by the winds; they germinate and grow up; animals come to feed upon them; both plants and animals die; and thus a mixture of decayed rock, with the remains of animals and plants, gradually overspread the entire surface of the dry land. It is to this mixture we apply the name *soil*,"

"But the soil thus naturally formed," continues the author, "differs in quality, from various causes. The rocks which crumble differ in their chemical composition; their crumbled fragments are spread over the surface, and sorted by wind and water in different ways; and the kind and quantity of the animal and vegetable matters they are mixed with, differ much. Through the agency of these and similar causes of diversity, many varieties of soil are produced, which are not only unlike to each other in their sensible properties, but very different also in their agricultural value." [Vol. 1, p. 42.]

Chemically speaking, the substance or constituent parts of a soil, as ascertained by analysis, are as follows:

1. Silica, or finely pulverised flint stones.
2. Alumina, or pure clay.
3. Lime, that is, the chalk of bones, shells and a certain kind of stones.
4. Magnesia, or a soft, white, flour-like powder.
5. Oxyd of iron, or iron rust.
6. Salts, that is, various substances composed of some acid united with a metalic oxyd or alkaloid.
7. Remains of animals and vegetables.

Here, as before, from chemical analysis, it is easy to see that the substances above mentioned may be united in very different proportions, one or more failing altogether, and hence very different soils produced from the same substances.

For example, where silica, or pulverized flint stones, or sand predominates or exceeds a due proportion in a soil, such soil will not

answer the general purposes of agriculture, as it will produce only such vegetables as require an unusal supply of silica. Again, if a soil abounds in alumina or clay, it will be fit only for those plants or grasses which demand a large quantity of clay for their growth and support. And so of others.

For practical purposes, soils may be known and named after the names of their predominating compound, viz:

1. A silicious or sandy soil is one where sand or gravel greatly abounds. This soil is light, friable, readily absorbing moisture, and as readily yielding it up to drying winds or the heat of the sun. The surface of such soils is easily moveable by winds or floods of water.

2. Aluminous or clayey soils are heavy, adhesive, cold, and when dry, very hard. They are valuable when mixed with silicious or limey soils, as alumina tends to give body and tenacity to the lighter soils.

3. A limey soil is one where limestone or sea shells greatly abound. It is often rich for certain vegetables.

4. A due mixture of the above materials with a due proportion of animal and vegetable matter constitutes what is termed loam, a black or dark colored, soft, mellow earth. If decayed vegetable substances greatly predominate, it is called vegetable mould.

It should be understood that whatever materials may enter into the formation of a soil, a proportion of water or moisture is essential to the growth of any vegetable.

"The beau ideal," therefore, "of a fertile soil, is one which contains such a portion of decomposing matter and of moisture as to keep the crop growing upon it always supplied with food in a state fit for introsusception, yet not so superabundantly as to render the plants too luxuriant." [Dic. of Gardening.] It is in the due proportion, therefore, of the foregoing analyzed materials, that a soil suitable for gardening or agricultural purposes may be produced.

Thus far our remarks will apply to soils in general all over the world. But it is of great importance to the agricultural interests of these islands that more definite, specific information should be disseminated among cultivators respecting the soils they cultivate. But here, the writer dares not hope that he can give any information.

There are obviously a great variety of soils on the Hawaiian group, but to understand their nature either chemically or for the purpose of practical agriculture, will require careful investigation and repeated experiments; for nothing is more common than to see vegetation growing luxuriantly in one location, and almost entirely refusing to grow in another not far distant.

As for the first ingredient mentioned in the formation of a soil, viz: silica or sand, that is, pulverized flint stones, there is probably very little if any on the islands. What is called sand on our sea shores is mostly made up of broken coral, shells and lava. Mr. Richards once caused a quantity of sea sand to be melted. The result was a large cake of black friable lava; showing that the lava preponderated.

A few things only can be submitted relative to the soils of these islands. It will not be disputed that the islands were originally of volcanic origin; that either when thrown up into their present form, or previously, they were in a fluid or semi-fluid state. In this condition once were all these mountains, hills, ravines, depressions and plains. They must then have been destitute of every vegetable, from the fact that there could have been no soil for their production or support. All was rock, lava, scoria and slag. But the winds, rain, and heat of the sun, would make an impression. The surface of the rocks would soften, and some parts would fall off; the lava, still softer, would begin to disintegrate; the scoria and slag would crumble, fall into masses—would oxydize; and acted upon by winds and rain, the crevices of rocks would fill up, a smoother appearance would follow, seeds of vegetables and trees would be brought—would grow, die, fall down and decay. From time to time quantities of decaying matter from the mountains and hills would be deposited in the ravines and vallies and on the plains. This mixed with decayed animal and vegetable matter, would form a soil below. Now, from the tops of the mountains to the shore there would be soils of different kinds, according to the various operations of nature in different locations and under different circumstances, and these soils would be adapted to different products according to their different compositions. If we go to the top of Haleakala, on Maui, we shall find it nearly destitute of vegetation; because, as fast as the winds and rain decompose the

rocks, the lava and the volcanic sand, the winds drive and the rains wash all the movable particles down the mountain till some obstruction prevents them, or till they reach the plain. As we descend lower, where decomposition has been going on aided by what was received from above, we find different kinds of vegetation, and so on till we arrive in a dense forest, where a rich loamy soil may be found, a soil adapted to potatoes, corn, wheat, and other vegetables.

If, on the other hand, we descend on the windward side, the wind, indeed, drives nothing downward, but with the rain it helps dissolve all the soft parts of rocks and lavas, helps decompose vegetables till, without a very deep soil, a dense forest of heavy timber is found, and perennial greenness is seen even to the sea beach.

Such, in few words, may be the theory of soil-making on these islands. It appears that most of the soils where cultivation has been attempted are located either on or near the sea beach, say from ten to seventy feet above the level of the sea, on the leeward sides of the islands. Then passing over a belt, little has been attempted till we gain the height of 1,500 to 2,500; this is the region of sugar cane, wheat and Irish potatoes. The soil near the beach on the leeward sides of the Islands may be denominated an alluvial or a washed soil, having been brought from the mountains by winds and rains and mixed with the sand of the shore, which, as before, is composed of broken lava, coral and shells, together with the decayed vegetable and animal matters. This soil is generally rich, dry and warm, and needs artificial irrigation.

On the windward side of the Islands, where the rain has been the more efficient agent, the soil is perhaps not so deep; but from more decayed vegetable matter is more moist and more productive, and cultivation may be extended from the shore to any convenient height.

High up the mountains the subsoil appears to consist of half decomposed lava, containing large quantities of the red oxyd of iron. Some locations, however, contain more or less alumina or clay.

The ravines also have varieties of soil, as they have different deposits from above, but all productive.

It is difficult to say exactly how long the process of decomposition of lava must be before vegetation can be sustained; but it appears

that ferns, grass, and even trees will grow before there is any visible appearance of a soil. In 1828 the writer passed over a tract in Koolau, on the northern side of East Maui, which to all appearance had lately flown down from Haleakala. The lava was crumbled fine, that is, from the size of a man's fist downward, black, shining, hard, and not a particle of earthy matter could be seen; yet from this mass was growing very luxuriantly ferns, grasses, bushes, then becoming small trees from ten to twenty-five feet in height. How many years this mass had been acted upon by strong winds and heavy rains it is difficult to say. The lava was scarcely changed in color or form, and to all appearance the vegetables then growing were the first growth. The writer has been informed that the place is now covered (28 years) with a dense young forest. On the south side of the same mountain, in Kahikinui, there seems to have been a flood of lava, at some age long ago, which is nearly bare of vegetation, and the only change apparent on the lava is a slight decay, or the oxydization from the atmosphere. This region has but little rain and the winds are very oblique.

Again, in 1830, the writer noticed, in traveling from Hilo to the volcano of Kilauea, after passing the forests several miles that tracts of lava, a species called by Hawaiians *pāhoehoe*—smooth, flat, and when fresh, shining—were lying from one to five acres together, where not a weed, bush, or tuft of grass could be seen. In 1850, passing over the same region, he noticed that these same tracts were nearly covered with a growth of young ferns, grass and bushes, averaging from two to four feet in height. This region is acted upon by the trade winds and rains, and this growth has been produced in the space of twenty years.

There are several things that tend to modify the character of soils whatever the composition may be.

Vegetation itself has an influence. If a tree fall to the earth, it will eventually decay and its particles will be mixed with the existing soil, and will so far change the properties of that soil. So of grasses, weeds, bushes, especially when they grow in abundance, and the operation of growing, dying and decaying has long been continued. If such locations are found at the foot of mountains, or on the banks

of streams, the soils there are called alluvial soils, or in common language, loam. Of such is the soil of Lahaina, Maui, and Holokahua, east of Honolulu. They are generally rich so far as the composition of the soil is concerned, and capable of producing a great variety of vegetables. Vegetation, therefore, has the reciprocal action of cause and effect.

Rain also modifies the soil, not only by furnishing moisture for the plants, but its effect upon the different constituent particles of soil. The chemical properties of rain act differently upon the soil from water poured on. Add to this the frequent washing of the leaves of vegetables, and it will soon appear that two pieces of land of the same soils, one watered altogether by irrigation and the other by showers, will soon have their soils unlike.

The trade winds in some locations have a modifying effect on soils, besides their connection with rain. Where they are so strong as to move sands, the sands are more or less moved by them and thrown into banks or hillocks, and are so fluctuating that but little vegetation grows, as between East and West Maui, and on the eastern side of Kamaalea Bay. Winds also effect plants and even trees, especially fruit trees, by whipping their leaves and curvating their trunks, and preventing the ordinary operations of nature and thwarting what would otherwise be the regular productions of the soil.

Manures change the character of a soil: but this introduces another subject which does not belong here.

Cultivation itself has an influence upon soils, especially that of barrenness and fertility. Properly cultivated, soils become more and more productive; badly managed, they soon wear out.

A grand desideratum on these Islands is the skillful regulation of of wet and dry, so as to constitute the great mass of soils available. The superabundant moisture, however, is more manageable than its opposite. Few locations are such that they cannot be easily drained if there is naturally too much water; but for dry soils there is more difficulty. Thousands and thousands of acres are found on the Islands partly or wholly barren for want of sufficient moisture; and even many of the tracts subjected to cultivation are deficient, for nothing is more common than for crops to suffer from drought. The

partial remedies are two: one is mixing aluminous or clayey earths with the sandy or alluvial soils. The clays are retentive of moisture and will absorb it from the atmosphere, and hence will bear a greater degree of drought. The other is deep cultivation. Modern experiments have demonstrated that for deep soils deep digging or plowing is a pretty sure remedy for drought. The soil in such cases receives and retains more moisture than it otherwise would, and imparts it in time of need. This remedy applies to alluvial or semi-alluvial soils. All kinds of earth, however, will not bear deep digging. If the digging or plowing brings up the hard red earth containing considerable red oxyd of iron, such earth will be unproductive until it has lain a year or two exposed to the winds and rains of the atmosphere. Last February the writer had a portion of his garden dug up and pulverized, to the depth of from twenty-two to twenty-eight inches. On one part he noticed that the lowest twelve inches or more was a thick, heavy, reddish earth, and this, without reflection, was left on the surface. Some squashes were planted, which after a long time came up and slowly grew to the third or fourth leaf, and then died. Beans afterwards, with manure, produced about half a crop.

The writer will now close his remarks by several suggestions:

1. The Society needs more information relative to the nature of soils, such as could be imparted by an agricultural chemist.

2. Time and patience must be expended after all that chemistry and the analysis of soils can do. For example, the books say that silica and alumina, that is, powdered flint stones and clay, are essential to good soils, and yet we have very good soils on these Islands apparently without a particle of either, unless indeed they are found in our lavas.

3 Every farmer and gardener should not only try experiments, but should keep a book noting his experiments, with dates, kinds of soil, method of cultivation, with the results, with all the accuracy of a practical book-keeper.

4. One or the other, or both, of our newspapers should devote a short or long article, as the case may be, each week to agricultural subjects, theory and practice. They should be written in plain language, easily comprehended by common readers.

5. Let industry, patience and perseverance supply the place of a great outlay of cash at the commencement of our efforts. Cultivate no more than can be cultivated thoroughly, that the experiments may fairly be made. It seems from late efforts that no bounds can be set to the fertility of the soil when properly tilled; and the ratio of expense diminishes with the ratio of the products.

REPORT ON FLORICULTURE.

HONOLULU, July 29, 1856.

Mr. President, and Gentlemen of the R. H. Agricultural Society:

I have to regret particularly in this usually leisure season with the business men of our community, that a multiplicity of business matters have so pressed upon my time within the last few days as entirely to preclude the possibility of my performing the duty assigned me of preparing a report for your Society upon the subject of Floriculture.

An abler pen than mine when once enlisted, would most undoubtedly furnish from a theme so prolific, even in the few moments I now devote to it, an exceedingly interesting and flowery report; but as you are aware, I am much more accustomed to deal with facts, than flowery figures of rhetoric. I shall therefore simply "report progress, and ask for further time."

That we have made steady, and somewhat rapid progress in Floriculture as a society, not only during the last year, but from year to year since the organization of this association, no resident of Honolulu during the last six years, will deny. And I think I may safely report, that during the last year, more progress has been made in Floriculture than any other branch of culture recognized and encouraged by your Society, and had our fair taken place six or eight weeks earlier, my assertion would have been backed up by a display of flowers, perhaps scarcely inferior to that of similar exhibitions in the oldest and most refined cities of Europe and America. As it is, lacking the aid of the *forests*—the importance of which has been so

ably demonstrated to you this evening—in bringing, condensing and returning the moisture so essential to the growth and development of the vegetable kingdom, especially flowers, in the light, arid soil of Honolulu; and also in the absence of either forests, fences, or aught else "to keep the strong trades from the Pali fifty feet over our heads," or even one foot above the heads of our flowers,—I can but fear a poor display to-morrow, and shall not be surprised if some of our friends are led to believe we have taken a retrograde step since fifty-five, should they allow themselves to judge of our progress from the exhibition.

Such however is not the fact. Not only has the display at our annual fairs increased in quantity, but the daily, and I might almost say uninterrupted display from January to December in the front yards and gardens of our citizens, bears incontrovertible testimony to the fact, that no pains or expense, within command of those interested in this delightful occupation, has been spared to introduce the most choice and valued varieties of plants, flowers, and shrubs, from every quarter of the globe accessible.

Several varieties of the rose—the queen of flowers—have been introduced during the last year. The sweet-scented honeysuckle, has for the first time blossomed in our yards. The white and the red pond lily, are also here, and we hope soon to gratify you with its rich perfume.

A variety of seeds, and some plants of choice kinds have lately been introduced from Tahiti and Valparaiso. An important fact to be borne in mind by your Society in connexion with this subject is, that all is done by individual enterprise and spirit, without cost or trouble to the Society, and is besides a source of revenue to its treasury. Respectfully submitted,

J. H. WOOD.

REPORT ON MANUFACTURES.

Pokii, July 19, 1856.

Dear Sir:—As it is out of my power to be present at the next

meeting of the Agricultural Society, it will fall to you, in my absence, to present the report on Manufactures.

It was only on the 17th instant that I was informed by a circular, that Mr. R. A. S. Wood had declined acting as chairman of the committee on manufactures, and that I was expected to report in his stead. I had before remarked that I was one of the committee, and had written some remarks that I intended to forward to the chairman, for him to embody in his report if he saw fit, and as the short time that has yet to pass before the meeting of the Society puts it out of my power to procure any farther information on the subject, I am sorry to say that my report must be a very meagre one.

With respect to native manufactures, I can report that they are not on the increase on this island. Although I have given myself some trouble on the subject, and promised a good price for the articles, I have not been able to procure a hat or a fine mat for the exhibition. On this part of the island, where the grass for these articles can be procured in any quantity, there could no doubt be a good deal of money made by their manufacture, if the women and girls would only work at them, but I much fear that years will pass before such a revolution takes place in their habits as to induce them to work, unless driven to it by necessity. From one woman, who last year received five dollars premium for her hats exhibited by the Society, I have not been able to procure enough to supply the orders of a few gentlemen in Honolulu.

During the last few months, Mr. J. R. Opitz has begun the manufacture of cigars at Koloa, which, should it succeed, will prove a great benefit by supplying with a home manufacture what is at present an expensive article of import.

The most important addition to our manufacturing industry has been made by H. A. Widemann, Esq., of Nawiliwili, by starting or reviving the manufacture of kukui oil. A good many years ago, the pressing of oil from kukui nuts was carried on at Koloa by Mr. Goodale, who as far as I can learn tried to introduce it as a substitute for paint oil. How far he succeeded I cannot say, but as what he made was inferior to linseed oil, I suppose he did not meet with a ready sale. Mr. Widemann, who intends his for burning, has taken a dif-

ferent method in its manufacture, and in my opinion makes an oil that is second only to the best sperm. This opinion I give after using it for some time in my own house. As the nuts used were formerly allowed to rot on the ground, we may look upon every gallon of kukui nut oil made, as so much directly added to the wealth of the islands, and it is to be hoped that people will buy this home made article rather than imported oils. When Mr. Widemann has got his presses, &c., in good order, he expects to make about 170 galls. per week, and as the picking, grinding and pressing of the nuts is rather expensive, only a ready sale can remunerate him for his outlay. I have lately seen some painting done with kukui oil, which leads me to suppose that with care in its manufacture it will answer the purpose as well as linseed oil.

In the hope that you will be able to add to this, so as to make it of sufficient value to present to the Society, I remain,

Your obedient servant, A. ARCHER.

REPORT ON WORMS.

WAIAWA, July 18th, 1856.

Dr. Wm. Hillebrand:

DEAR SIR:—As I shall not be present at the Agricultural Exhibition to be held at Honolulu on the 30th of this month, it will devolve upon some other member of the "Committee on Cutworms and other injurious vermin" to make a report at the meeting. You are the only member of said committee that I know will be present, and I therefore take the liberty of addressing you on the subject, leaving it, of course, altogether to your better judgment how to act farther in the case. When it came to my knowledge that I was put on a committee on cutworms, etc., and was expected to make a report thereon, my first impression was to beg myself excused on account of my short stay on the Islands and ignorance on the subject, but taking an interest in the efforts of the Society, and considering that any suggestions, or small special information, added to the stock of knowledge on hand, might be of some value, I resolved to put down what little I

know of the worms on these Islands, and what I think might lead to diminish them.

The valuable reports made to the Society by Dr. Newcomb in 1852, and by Mr. J. W. Marsh in 1855, have left nothing to write on the subject in general, and I shall therefore restrict myself chiefly to the cutworms and their ravages in this district of Waimea, Kauai.

I have often in vain tried to get some information on the worms from natives, but all their experience seems to be, that it is of no use to fight against the cutworms when they come thick, as only happens once in several years, and that always in very rainy ones. In the spring of 1855 the rains fell unusually heavy, and the most part of the lands here were for a few days overflowed. Shortly afterwards the cutworms appeared in masses, and when the foreign planters tried to get rid of them, the natives without any exception advised not to kill the worms, as they certainly would revenge themselves.

The quantity of worms was astonishing, and when a number of buckets full were picked off, the next morning would find them on the same field almost as thick as before. Upwards of 100 cutworms by one plant was not at all rare, and generally they were found lying together of all ages and sizes, from the largest 2½ inches long and ¼ inch in diameter, to the small, newly bred one-quarter inch long, as thick as a pin.

This kind of family life seemingly led to the idea that the smaller ones were bred from the large worms; and I have heard that it is believed by several foreigners, that these cutworms in their propagation do not go through the changes of other insects. In order to satisfy myself, I put several large cutworms in tumblers half full with sand, and fed them till they changed into chrysalis, from which afterwards came a very pretty moth 1¼ inch long, black body, gray wings and a short, thick head. It kept quiet through the day, but got very active towards sunset—in that respect like its descendants, the cutworms, which prefer foraging at night. Though always on the lookout for all kinds of moths, I never happened to find but one of these moths besides what I bred myself.

Of the cutworm, which the natives here call *kupa*, I have found five varieties:

1st. Brown, with a white stripe on the back and white belly. It grows to the largest size, fully 2½ inches long and one-quarter inch thick. It is very voracious, and a single worm will strip a large plant, leaving nothing but the ribs.

2nd. Gray, with a brown back of a bright shining appearance; it does not grow quite as large as No. 1. It is the regular cutworm that seems to enjoy nothing but the juice of the stems, which it will often cut off when quite large and hard.

3d. Is as destructive as the former, and also like it in color and size, only not bright or shining on its back.

4th. Is bluish-gray, with head and tail white—rather rare.

5th. Mudcolored; is the one that appears every year, and seems able to do with less wet soil. It is not quite as voracious, nor does it attain the size of the former ones, but still is very destructive.

There may be, and no doubt are, more varieties in shades of color, but the five above named seem quite distinct.

To find out some way of exterminating these troublesome visitors, would be as great a benefit as could be conferred on farmers on these Islands; but I am afraid it will take a long time before man shall get so far into the secrets of Nature's working. The locust and grasshopper, the army worm, and other vermin, have since time immemorial been known in different parts of the globe to ravage large tracts of cultivated land, and still mankind is at the present day as ignorant how to destroy them as thousands of years ago.

If the whole area of the Islands were or could be cultivated, it might be possible to exterminate the whole tribe of worms; but the thousands of acres of kula land and mountain sides, where the plow never reaches, afford the different vermin a safe breeding place. It has been recommended to farmers to burn off the grass of surrounding waste lands, but I very much doubt whether this does any material harm to the chrysalis, which generally is buried an inch or two in the ground. The use of coal-tar, soap suds, and such like, may be of some use in a small garden, but would be out of the question on a field.

The only hope of effectually checking the ravages of such an enemy, whose ways and means are hidden to us, seems therefore to

be, as recommended by every writer on the subject, to counteract the worms by protecting their natural enemies. First in the rank of these stands the native plover, *kolea*, who, at some seasons, chiefly feed on the different chrysalis, and it ought to be forbidden by law to do any kind of harm to these birds. The dragon-fly also wages an incessant and successful war against all mothers of vermin. Lizards, spiders, and the indigenous small ant no doubt help to destroy a large quantity of worms; but still all our native forces have proved insufficient, and we have to look round to find more assistance. Several birds have previously been recommended as destroyers of vermin, but however pleasant their presence would be, I fear the importation of most of the kinds named would be difficult and expensive, and most likely the birds when here would hie away to the mountains, and therefore be of less assistance to the farmer. The quail may be would make an exception, as this fine bird seems to love the neighborhood of the farm. It is not difficult to procure nor to support under transportation, and it increases rapidly. A distribution of this bird by the Society over the different islands, would have beneficial results if the birds were let alone. Another great enemy of all larvæ has been suggested to me by a friend, and I must acknowledge that if it would thrive here, it is likely to be a greater destroyer of vermin than all others. The large black ant of North America and Europe is known to every foreigner, and deservedly renowned for its strength and ceaseless labor. An anthill has its avenues to all parts of the surrounding country, and few worms would escape. The large ant does not, like the small one, settle down and become a nuisance in every house, but makes its own home on the field or hill, and never ceases to fill its larder.

It could not be any great expense to try getting the large black ant introduced, and when once numerous it is my impression that it would show itself very useful.

Respectfully your obd't serv't,

VALDEMAR KNUDSEN.

REPORT ON BEES.

LAHAINA, July 28, 1856.

Rev. A. Bishop, Chairman of the Committee on Birds and Bees:

DEAR SIR,—Captain Matthews W. Green, of the "Raduga," who was for many years settled in the neighborhood of Boston, gave much attention to horticulture, and particularly to the care of bees. He is very sanguine that he should succeed in bringing out a swarm to these Islands, and will probably attempt it, if he comes hither again.

Capt. G. lays much stress upon the importance of ventilation, and thinks that a hive could be so prepared, by covering the openings with wire gauze, as to secure the needful supply of air, and yet prevent the exit of the bees. I present this hint for what it may be worth.

The same gentleman gave me a valuable treatise on the subject, from which I had hoped to draw something that might be of value to the members of the Hawaiian Agricultural Society, but in the three removes which are as bad as a fire, the precious document has been mislaid, and I have defered writing to you until this eleventh hour in the vain hope of finding it.

One question has suggested itself to my mind in estimating the probable productiveness of bees in this tropical region. It is this. How far can we rely upon them to lay up stores where they have no winter to provide for? Will they not speedily fall into the unthrifty habits of their new home, and learn to live, like their neighbors, "from hand to mouth?" Sad indeed it is to think that e'en "the little busy bee," may be seduced by the sweet blandishments of a perpetual summer, from that industry which is her crowning glory. Where then shall we point our children to an example? Parental instinct would still no doubt prompt to the gathering of those stores which the young bees will demand, but would this supply be sufficient to satisfy our desires?

I hear it often said, that we cannot have honey till we procure, not only bees, but the food which they will require. I see no cause for this remark. We have a great variety and abundance of flowers in our woods and fields,—the kukui, acacias of many varieties, hala,

hao, ki, banana, sugar cane, and a host of others. Let us have the bees, and I will guarantee them food enough.

Very respectfully yours,

EDWARD P. BOND.

REPORT OF THE COMMITTEE ON INDIGO.

By D. Frick, L. L. D., *Consulting Manufacturing Chemist.*

A fair trial of nine months has given to us every opportunity for judging of the practicablity and ultimate success of the manufacture of indigo from the indigenous plant of this archipelago. The obstacles to our progress in that industry having been independent of the Hawaiian indigofera, as well as of our own perseverance and knowledge of the operation, are then not of a nature to prevent that enterprise from being resumed under more favorable circumstances than those under which we were placed.

We had established our little works in the valley of Nuuanu, at a distance of about two miles from Honolulu. From 4 vats, with which we began, we had successively increased their number to 24, which gave to us 12 for the maceration of the plant, and 12 for the corresponding beating operation of the water charged with unoxydized indigo. Of these 12 vats, 4 were ready every day for oxydation, consequently 4 new ones were filled daily. Two native lads were employed to bring the required plant in, but for the great laziness of such hands, one might have been sufficient, during the maturity of three crops, in the wild condition of the plant. Two intelligent operators were required to beat these 4 vats until the oxydation of the coloring matter was completed, which, owing to our own process did not take more than half an hour per vat of two feet and a half to three feet in diameter, with a depth of about two feet; the same operation requires usually three full hours by the method generally in practice. The indigo suspended in atomic particles in the liquid, does not precipitate under three hours, by the ordinary process—we obtained that precipitation in about half an hour, which difference gave us for the two stages an advantage of about five hours over a similar

manufacture elsewhere. The filtering, boiling, and bagging of the paste, the division and dessication of the lumps cut into mercantile squares did but absorb the half of the operators' time, and with two hands, more for the feeding and emptying of the 4 vats as well as for the pumping for the maceration of the plant, double the number of our vats might have easily been worked.

Our proximity to the town was however an advantage purchased at the expense of many unfavorable conditions, arising chiefly from the inconstancy of the weather in that pass. Sun-shine being a valuable auxiliary to promote a good fermentation, our vats were but covered by the canopy of heaven during the day, at night they were under frames of sail-cloth, which entertained the required temperature without excluding altogether the air. The sudden squalls of wind and the heavy showers of rain which so often rush through the valley, as out of the mouth-piece of a blow-pipe, are accidents that must prevent in future the establishment of indigo works in the same locality, for not only do they interrupt or stop altogether the fermentation, but the water added to the macerating liquid, causes an overflow that spoils entirely the operation. The pressure of these difficulties, so heavy against our efforts, was certainly a great draw-back in our produce, but a moderate living could still be obtained had we found at hand a market for the article. The absence of all home consumption, and our failure to dispose of the Indigo at San Francisco, had left to us no other alternative than that of shipping the goods for some great manufacturing district and wait for the returns. This being beyond our means, we were under the painful necessity of abandoning a labor for which a weekly salary was a vital condition for us. We have already mentioned that the indigo plant spontaneously growing on these islands is not one of the richest in quantity, but very satisfactory in quality, and in a normal condition of weather we produced invariably a first rate article. In fact, for the last four months of our existence, there was not a shade of difference in the brightness of our produce.

This quantity would besides be sensibly increased by a proper cultivation of the same plant, which might be sown at such intervals as to procure every month a crop ready to be cut in its flowering.

The first conditions of success depend then upon the locality and the cultivation. In that respect, Maui and Kauai seem to be very favorably situated; land with an abundance of flowing water and comparatively cheap labor may easily be obtained. We would recommend the construction of wooden troughs of the capacity of six or eight of our vats; they would both be cheaper, of a longer duration, and not subject to the repairs often claimed by vessels exposed to the open influence of the atmosphere.

The first expenditure for such a business, upon a large scale, would be but moderate, when compared with the certain profits of the operation. We are disposed to communicate our own process and improvements for a just consideration, to any party who should feel inclined to purchase the exclusive privilege of our knowledge, in that manufacture. We are also willing to direct for a short time, the works through all their stages, until a competent manager has been formed, under our tuition. Such a speculation, for any party that would not be pressed by time, for the realization of the profits, offers the rare guarantee of a sure reward, without any chances of a loss. And a new importance might be derived from the creation of small branches on the premises of the natives of the neighborhood, of whom the precipitated paste could be purchased at a fixed ratio per bucket, according to a similar contract in practice in China.

REPORT ON KUKUI OIL.

By. D. Frick, L. L. D., *Consulting Manufacturing Chemist.*

To the President and Members of the R. H. Agricultural Society:

Gentlemen:—A most valuable tree is suffered to scatter its crops in the woods of this archipelago, where but a few of its nuts are picked up to lighten the long nights of the laziest among the natives, who are satisfied to use the kernel—their primitive luminary—instead of expressing its oil upon the wick in a burning apparatus. Some, but a very small number for the rural population, extract the oil for their lamps, and occasionally sell a few bottles of it. The late Mr. French, an intelligent and enterprising man in his time, had set up a mill to

produce that oil upon a respectable scale, but its imperfect principle, joined to the inducement of more profitable schemes, had led him to the abandonment of an industry that an enlightened perseverance would have raised to the rank of the best sources of fortune, from the natural richness with which Providence has gifted this country.

Believing that this subject should most essentially deserve the interest of at least the serious members of this Society, I beg to communicate to them the result of some experiments made by me to show how far I have succeeded in proving that this oil is susceptible of receiving the properties for many useful applications.

Of the six vials with which I intend to contribute towards your agricultural show, the numbers 1, 2, 3, contain samples of kukui oil obtained by the rude process of the natives; the light shade of difference perceptible between them is owing to the degree of torefaction which carbonized more or less the fluid and imparted to it that brown, opaque color. In this state the oil has received a body at the expense of its limpidity, and a certain virtue of siccativeness adaptable to painters' purposes. By the means of a combination of mineral acids, afterwards neutralized with a carbonate of lime, it freed this oil of its carbonized glutinous substance, and re-established its limpidity, but my agents awoke a yellow coloring principle which remained staining the oil, after all the saturation of the acids was completed. The oil marked No. 4 is an improved light generator and a capital body for saponification. No. 5 is a sample of that produced by the mill of Mr. Widemann, at Kauai. Its color announces a cold drawn oil, holding in suspension the less pure extract of the kernel's epidermis, which presence leaves a dullness in the fluid. Though less siccative than No. 4, it may be employed for light shaded paints, is a good lamp oil, and will make an excellent soap, provided that its rancidity is promoted to facilitate its combination with the caustic alkali, as the French do for their Marseille soap, made of the worst of olive oils.

With a careful operation, by the means of an alkalized substance that has more affinity for the impurities than for the pure oil, I obtained No. 6, which is a superior light provider, a good feeder for machinery, and a capital substitute for olive oil in the preservation of animal or vegetable culinary preparations.

These applications would already suffice to awake the attention of the enterprising members of our community, but I hope ere long to point out a new field for the consumption of this article. The merit of my manipulation consists above all in the cheapness of my *modus operandi*, which, including the chemical agency, the wear and tear of the apparatus, will not add above six to eight cents to the cost of a gallon of cold pressed kukui oil; and the latter might be produced for about fifty cents the gallon.

No author's sanguineness has deceived my estimation; the operation is as simple as it is efficient. If my sample is small, it is owing to the limited size of my utensils, for with a proportionate apparatus I could have produced a hundred gallons in the two hours that lasted the filling of the vial No. 6.

May this note be considered as a new proof of my desire to leave some useful traces of my exile in the Hawaiian Islands.

A few observations on the Nature of Arrow Root, and new applications for that Fecula.

By D. Frick, L. L. D., *Consulting Manufacturing Chemist.*

In my endeavors to discover the attractive mover for the insects that invade the farinaceous substances, I have separated by lixiviation the gluten from the fecula in wheat flour, and soon ascertained that the gluten alone was the object of the insect's predilection. In its state of isolation in a compact body of adherent molecules, the insect's action is null, owing to the resistance of the surface of the substance which, through its contact with the air, is soon converted into a varnished coating, but in its state of combination with the fecula, when highly divided, it is in a favorable condition to tempt the insect. As to the fecula which, after its dessiccation, represented the same impalpable powder as before, that is to say, in a state of division proper to induce the introduction of insects, it remained untouched, whilst some flour placed near it was swarming with grubs and weevils.

Satisfied in my mind that fecula must be a kind of vermifugeous powder, I filled three tin boxes, one with wheat flour, the second with

the same but covered with an inch thick layer of fecula from arrow root—the third containing arrow root only. The three boxes were placed together within the reach of insects that we collected near to them. The first box, that of pure flour, was attacked almost immediately; the two others, though in contact with it, remained free of the nuisance during the eight days that the trial lasted.

In consequence of this satisfactory result, I recognize in the nature of fecula a virtue that is not only preserving for that farina itself, but for all dry subjects that would otherwise become a prey to the rapacity of insects. The covering with or packing in fecula will, in all such cases, become a protecting panacea that was for a long time wanting in the tropical climates particularly.

I have begun a series of experiments to establish how far the adoption of this process may extend its benefits, and I shall hereafter communicate to the public, through the press, all the information which my intelligence may derive from my researches on that interesting subject.

I take the opportunity of this general meeting of my colleagues of the Royal Hawaiian Agricultural Society, to introduce to our community at large this new property of one of our staple articles of home produce, the arrow root.

I should add that I have employed on purpose fecula of that tubercle that was considered of inferior quality, being more or less stained by the want of care in its preparation, and which shade is chiefly due to some particles of the eyes and pellicula that were not catiously removed; but that imperfection which affects merely the appearance of the arrow root is no impediment in my application, which will open a consumption for secondary sorts of this article, and reduce, by their cheapness, the cost of their employ.

REPORT ON COTTON

Mr. President:

At the request of many members, I submit a few remarks on the subject of Cotton.

About eighteen months ago, my attention was called to the cotton tree, (I cannot call it a bush) growing at Lahaina. Upon inquiry, I was surprised to find it had been fifteen years growing from the seed.

Sample No. 1, is some I gathered from the original tree.

Sample No. 2, is of my own raising from seed of the original tree. It was of very rapid growth, and in less than five months was ready for picking; and both in quality and weight was greatly superior to that from the original tree.

The Sea Island is the only kind growing at the islands, so far as my information extends. Its growth is amazing. That which I planted ran over twenty feet.

There are thousands of acres on the island of Maui adapted to the growth of cotton, as it requires a dry, loamy soil; and from information derived from Rev. Mr. Taylor, of Hawaii, I have no doubt there are also large tracts on that island adapted to the cultivation of cotton.

A great advantage at the islands over the United States, in the cultivation of cotton would be, that it does not require here to be planted every year, while cotton could be picked ten months out of every twelve. In the United States they raise from five to eight hundred pounds to the acre; here, say you raise five hundred pounds the first picking, and five hundred during the remaining five months, and you have a thousand pounds to five or eight hundred in the same time. In the States it has to be planted every year, while here, it would not require to be planted oftener than once in five years, and it would neither decrease in quantity nor deteriorate in quality sufficient to justify its planting oftener.

So far as my observation extends, the cotton plant here has fewer diseases than in the States, only the boll-worm and the cotton lice, and these to no great extent.

In planting here I would recommend to have the plants about eight feet apart, or nine feet, if the soil is very rich and strong. The plants will require different treatment in different localities, and experience alone can direct the farmer.

Seed for planting should be ginned immediately, and spread upon the floor to dry. If the cotton seed be not wanted, pack the seed cot-

ton away in the house, to remain until a gentle heat is perceived, when it is in a good condition to gin. When heated so as to become perceptibly warm to the hand, it should be opened and spread out to cool. Cotton thus heated will gin faster and have a softer feel, will not be so brittle and will have a rich creamy color.

The seeds are useful for oil, and as food for hogs; thrown in a pile until they become heated, they are good for manure.

Respectfully submitted, F. A. OUDINOT.

REPORT ON TOBACCO.

Acting for the Chairman of this Committee, whose ill health causes his absence, I can, in a report on tobacco, do little more than furnish to the Society such statistical information as we have been able to collect concerning the manner and quantity of the growth of tobacco here, and the amount exported and imported.

Though tobacco is said to be one of the natural products of this country and capable of growth in any quantity, its cultivation as a business is still confined to one portion of the Island of Kauai, where this year will be cured a crop of probably 60,000 lbs., said to be equal in quality and flavor to any tobacco in the world. The *cost of* the production is estimated at four cents per pound, and of the manufacture of cigars at four dollars per thousand, for which it takes twenty pounds of tobacco.

In cigars I think we have made a decided advance, and that some now in the market from the manufactory of Mr. Opitz will bear comparison with the best imported ones.

There are now manufactured on Kauai one thousand cigars per day, for which will be obtained prices varying according to quality, probably from ten to fifteen dollars.

The Custom House books show the imports during 1855 to have been 48,703 lbs. of tobacco, valued at $7,854 35, and 1,881,500 cigars, valued at $22,245. No exports.

During the six months of the year ending June 30, 1856, the imports have been of tobacco in boxes, of which the weight is not stat-

ed, $468 73; of cigars, 605,300, valued at 6,294 17. The export of tobacco, 1,420 lbs., $205 35.

Accompanying this is a letter from Mr. Archer to Mr. Lee, which is in itself a better report on tobacco than any I could prepare, and to the concluding part of which I beg to call the special attention of the Society.

M. C. MONSARRAT.

POKII, July 16, 1856.

Hon. W. L. Lee, Chairman of the Committee on Tobacco:

DEAR SIR,—As I am the only one, of those placed on the committee on tobacco, who is engaged in its cultivation, it is probably expected that I should communicate our experience since my report of 1854.

For raising tobacco we have found the method recommended in my last report to answer the purpose perfectly, and we have this year by following that plan, raised above 30,000 lbs. without a worm-eaten leaf. If therefore, the production of tobacco consisted merely in growing it, I should think it unnecessary to add anything to my former report, but as experience has taught us that curing is of equal importance, I have to confess that that part of my report in which I treat of curing is perfectly worthless.

While harvesting the latter part of the crop of '55, we made some experiments in curing, with results that encouraged us to hope that we had at last hit on the proper method, and we have put the whole of this year's crop through the process then discovered with the best results. It is now our firm conviction that we have cured tobacco that can be manufactured into superior cigars, and we will give the public an opportunity of deciding whether we be right or wrong, as soon as the tobacco has acquired age enough to make it fit for use—say in six or eight months from now.

If I do not at present give an account of the process we have used, it is not that I wish to have its virtue proved by time before I do so. I should not like to have a second time to confess that what I had written on the subject was worthless. You must not suppose that we

have any wish to keep our discovery—if such it is—a secret, in order that others who engage in tobacco growing may have the same weary years of disappointment to wade through that we have had.

In conclusion, I may perhaps be allowed to remark, that had the suggestion of J. F. B. Marshall, Esq. when Vice President for Kauai been attended to, viz: for the Society to open a correspondence with Havana, for the purpose of ascertaining the process there employed in curing tobacco, we might perhaps during the last year, have been supplying the smokers of Hawaii with cigars, equal or superior to the imported Manila. By the list of corresponding members, I observe there is one for Havana, and I can imagine no more legitimate way, in which the Society could make itself useful than by supplying such special information as individual members may apply for.

Your obedient servant, A. ARCHER.

NOTICE.

The Board of Managers of the Royal Hawaiian Agricultural Society hereby give notice to the members, and the public generally, that the Room over Dr. G. P. Judd's office, corner of Merchant and Fort streets, has been engaged for the use of the Society, where may be found the Library of Agricultural and other works belonging to the Society, in charge of J. E. Chamberlain, Esq.

It is the desire of the Society to form a collection of specimens of the various productions of the Islands, and of their geology, mineralogy, conchology, entomology, &c. For this purpose they solicit the co-operation of all persons interested in these objects. Donations of Books will be gladly received.

Masters and officers of whale-ships are respectfully invited to aid the objects of the Society. Seeds, plants, trees, useful animals, and especially insectivorous birds, will be gratefully received, and valuable additions to the varieties now existing on the Islands may in this way be made.

It is thought that Deer will thrive and increase rapidly, if once introduced here. Whaleships visiting the California coast might readily procure them, at a trifling expense, which would be paid by the Society. Mr. Chamberlain will take charge of all articles that may be forwarded.

J. F. B. MARSHALL, President.

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